

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 August 2002 (01.08.2002)

PCT

(10) International Publication Number
WO 02/059148 A2

- (51) International Patent Classification⁷: **C07K 14/195** [AT/AT]; Arnoldgasse 2/7/4/27, A-1210 Vienna (AT). **TEMPELMAIER, Brigitte** [AT/AT]; Messenhausergasse 10/20, A-1030 Vienna (AT).
- (21) International Application Number: **PCT/EP02/00546**
- (22) International Filing Date: 21 January 2002 (21.01.2002) (74) Agents: **SONN, Helmut et al.**; Riemergasse 14, A-1010 Wien (AT).
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
A 130/01 26 January 2001 (26.01.2001) AT
- (71) Applicant (for all designated States except US): **CISTEM BIOTECHNOLOGIES GMBH** [AT/AT]; Rennweg 95b, A-1030 Vienna (AT).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **MEINKE, Andreas** [DE/AT]; Piettegasse 26/1, A-3013 Pressbaum (AT). **NAGY, Eszter** [HU/AT]; Taborstrasse 9/15, A-1020 Vienna (AT). **VON AHSEN, Uwe** [DE/AT]; Shmalzhofgasse 22/25 A-1060 Vienna (AT). **KLADE, Christoph** [AT/AT]; Gröhrmühlgasse 1B, A-2700 Wr. Neustadt (AT). **HENICS, Tamas** [HU/AT]; Taborstrasse 9/15, A-1020 Vienna (AT). **ZAUNER, Wolfgang** [AT/AT]; Parkgasse 13/22, A-1030 Vienna (AT). **MINH, Duc, Bui** [VN/AT]; Rudolf Zeller Gasse 70/6/9, A-1230 Vienna (AT). **VYTVYTSKA, Oresta** [UA/AT]; Leystrasse 110/1/2, A-1200 Vienna (AT). **ETZ, Hildegard** [AT/AT]; Lortzinggasse 1/21, A-1140 Vienna (AT). **DRYLA, Agnieszka** [PL/AT]; Pragerstrasse 43-47/2/15, A-1210 Vienna (AT). **WEICHHART, Thomas** [AT/AT]; Hinterholz 10, A-3071 Böheimkirchen (AT). **HAFNER, Martin**
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Declaration under Rule 4.17:**
— of inventorship (Rule 4.17(iv)) for US only
- Published:**
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A METHOD FOR IDENTIFICATION, ISOLATION AND PRODUCTION OF ANTIGENS TO A SPECIFIC PATHOGEN

(57) Abstract: Described is a method for identification, isolation and production of hyperimmune serum-reactive antigens from a specific pathogen, a tumor, an allergen or a tissue or host prone to autoimmunity, said antigens being suited for use in a vaccine for a given type of animal or for humans, which is characterized by the following steps: - providing an antibody preparation from a plasma pool of said given type of animal or from a human plasma pool or individual sera with antibodies against said specific pathogen, tumor, allergen or tissue or host prone to auto-immunity, - providing at least one expression library of said specific pathogen, tumor, allergen or tissue or host prone to auto-immunity, - screening said at least one expression library with said antibody preparation, - identifying antigens which bind in said screening to antibodies in said antibody preparation, - screening the identified antigens with individual antibody preparations from individual sera from individuals with antibodies against said specific pathogen, tumor, allergen or tissue or host prone to auto-immunity, - identifying the hyperimmune serum-reactive antigen portion of said identified antigens and which hyperimmune serum-reactive antigens bind to a relevant portion of said individual antibody preparations from said individual sera and - optionally isolating said hyperimmune serum-reactive antigens and producing said hyperimmune serum-reactive antigens by chemical or recombinant methods.

WO 02/059148 A2

BEST AVAILABLE COPY

A method for identification, isolation and production of antigens
to a specific pathogen

The invention relates to a method for identification, isolation and production of antigens to a specific pathogen as well as new antigens suitable for use in a vaccine for a given type of animal or for humans.

Vaccines can save more lives (and resources) than any other medical intervention. Owing to world-wide vaccination programmes the incidence of many fatal diseases has been decreased drastically. Although this notion is valid for a whole panel of diseases, e.g. diphtheria, pertussis, measles and tetanus, there are no effective vaccines for numerous infectious disease including most viral infections, such as HIV, HCV, CMV and many others. There are also no effective vaccines for other diseases, infectious or non-infectious, claiming the lives of millions of patients per year including malaria or cancer. In addition, the rapid emergence of antibiotic-resistant bacteria and microorganisms calls for alternative treatments with vaccines being a logical choice. Finally, the great need for vaccines is also illustrated by the fact that infectious diseases, rather than cardiovascular disorders or cancer or injuries remain the largest cause of death and disability in the world.

Several established vaccines consist of live attenuated organisms where the risk of reversion to the virulent wild-type strain exists. In particular in immunocompromised hosts this can be a live threatening scenario. Alternatively, vaccines are administered as a combination of pathogen-derived antigens together with compounds that induce or enhance immune responses against these antigens (these compounds are commonly termed adjuvant), since these subunit vaccines on their own are generally not effective.

Whilst there is no doubt that the above vaccines are valuable medical treatments, there is the disadvantage that, due to their complexity, severe side effects can be evoked, e.g. to antigens that are contained in the vaccine that display cross-reactivity with molecules expressed by cells of vaccinated individuals. In addition, existing requirements from regulatory authorities, e.g.

- 2 -

the World Health Organization (WHO), the Food and Drug Administration (FDA), and their European counterparts, for exact specification of vaccine composition and mechanisms of induction of immunity, are difficult to meet.

Some widely used vaccines are whole cell-vaccines (attenuated bacteria or viruses (e.g. Bacille Calmette-Guerin (BCG) (tuberculosis), Measles, Mumps, Rubella, Oral Polio Vaccine (Sabin), killed bacteria or viruses (e.g. Pertussis, Inactivated polio vaccine (Salk)), subunit-vaccines (e.g. Toxoid (Diphtheria, Tetanus)), Capsular polysaccharide (H. influenzae type B), Yeast recombinant subunit (Hepatitis B surface protein).

A vaccine can contain a whole variety of different antigens. Examples of antigens are whole-killed organisms such as inactivated viruses or bacteria, fungi, protozoa or even cancer cells. Antigens may also consist of subfractions of these organisms/tissues, of proteins, or, in their most simple form, of peptides. Antigens can also be recognized by the immune system in form of glycosylated proteins or peptides and may also be or contain polysaccharides or lipids. Short peptides can be used since for example cytotoxic T-cells (CTL) recognize antigens in form of short usually 8-11 amino acids long peptides in conjunction with major histocompatibility complex (MHC). B-cells can recognize linear epitopes as short as 4-5 amino acids, as well as three dimensional structures (conformational epitopes). In order to obtain sustained, antigen-specific immune responses, adjuvants need to trigger immune cascades that involve all cells of the immune system necessary. Primarily, adjuvants are acting, but are not restricted in their mode of action, on so-called antigen presenting cells (APCs). These cells usually first encounter the antigen(s) followed by presentation of processed or unmodified antigen to immune effector cells. Intermediate cell types may also be involved. Only effector cells with the appropriate specificity are activated in a productive immune response. The adjuvant may also locally retain antigens and co-injected other factors. In addition the adjuvant may act as a chemoattractant for other immune cells or may act locally and/or systemically as a stimulating agent for the immune system.

- 3 -

Antigen presenting cells belong to the innate immune system, which has evolved as a first line host defence that limits infection early after exposure to microorganisms. Cells of the innate immune system recognize patterns or relatively non-specific structures expressed on their targets rather than more sophisticated, specific structures which are recognized by the adaptive immune system. Examples of cells of the innate immune system are macrophages and dendritic cells but also granulocytes (e.g. neutrophils), natural killer cells and others. By contrast, cells of the adaptive immune system recognize specific, antigenic structures, including peptides, in the case of T-cells and peptides as well as three-dimensional structures in the case of B-cells. The adaptive immune system is much more specific and sophisticated than the innate immune system and improves upon repeated exposure to a given pathogen/antigen. Phylogenetically, the innate immune system is much older and can be found already in very primitive organisms. Nevertheless, the innate immune system is critical during the initial phase of antigenic exposure since, in addition to containing pathogens, cells of the innate immune system, i.e. APCs, prime cells of the adaptive immune system and thus trigger specific immune responses leading to clearance of the intruders. In sum, cells of the innate immune system and in particular APCs play a critical role during the induction phase of immune responses by a) containing infections by means of a primitive pattern recognition system and b) priming cells of the adaptive immune system leading to specific immune responses and memory resulting in clearance of intruding pathogens or of other targets. These mechanisms may also be important to clear or contain tumor cells.

The antigens used for such vaccines have often been selected by chance or by easiness of availability. There is a demand to identify efficient antigens for a given pathogen or - preferably - an almost complete set of all antigens of a given pathogen which are practically (clinically) relevant. Such antigens may be preferred antigen candidates in a vaccine.

It is therefore an object of the present invention to comply with these demands and to provide a method with which such antigens may be provided and with which a practically complete set of an-

tigens of e.g. a given pathogen may be identified with a given serum as antibody source. Such a method should also be suitable for rapidly changing pathogens which evolve a fast resistance against common drugs or vaccines. The method should also be applicable to identify and isolate tumor antigens, allergens, auto-immune antigens.

Therefore, the present invention provides a method for identification, isolation and production of hyperimmune serum-reactive antigens from a specific pathogen, a tumor, an allergen or a tissue or host prone to auto-immunity, especially from a specific pathogen, said antigens being suited for use in a vaccine for a given type of animal or for humans, said method being characterized by the following steps:

- ♦providing an antibody preparation from a plasma pool of said given type of animal or from a human plasma pool or individual sera with antibodies against said specific pathogen, a tumor, an allergen or a tissue or host prone to auto-immunity,
- ♦providing at least one expression library of said specific pathogen, a tumor, an allergen or a tissue or host prone to auto-immunity,
- ♦screening said at least one expression library with said antibody preparation,
- ♦identifying antigens which bind in said screening to antibodies in said antibody preparation,
- ♦screening the identified antigens with individual antibody preparations from individual sera from individuals with antibodies against said specific pathogen, tumor, allergen or tissue or host prone to auto-immunity,
- ♦identifying the hyperimmune serum-reactive antigen portion of said identified antigens which hyperimmune serum-reactive antigens bind to a relevant portion of said individual antibody preparations from said individual sera and
- ♦optionally isolating said hyperimmune serum-reactive antigens and producing said hyperimmune serum-reactive antigens by chemical or recombinant methods.

This method is also suitable in general for identifying a practically complete set of hyperimmune serum-reactive antigens of a specific pathogen with given sera as antibody sources, if at

- 5 -

least three different expression libraries are screened in a pathogen/antigen identification programme using the method according to the present invention. The present invention therefore also relates to a method for identification, isolation and production of a practically complete set of hyperimmune serum-reactive antigens of a specific pathogen, said antigens being suited for use in a vaccine for a given type of animal or for humans, which is characterized by the following steps:

- ♦providing an antibody preparation from a plasma pool of said given type of animal or from a human plasma pool or individual sera with antibodies against said specific pathogen,
- ♦providing at least three different expression libraries of said specific pathogen,
- ♦screening said at least three different expression libraries with said antibody preparation,
- ♦identifying antigens which bind in at least one of said at least three screenings to antibodies in said antibody preparation,
- ♦screening the identified antigens with individual antibody preparations from individual sera from individuals with antibodies against said specific pathogen,
- ♦identifying the hyperimmune serum-reactive antigen portion of said identified antigens which hyperimmune serum-reactive antigens bind to a relevant portion of said individual antibody preparations from said individual sera,
- ♦repeating said screening and identification steps at least once,
- ♦comparing the identified hyperimmune serum-reactive antigens identified in the repeated screening and identification steps with the identified hyperimmune serum-reactive antigens identified in the initial screening and identification steps,
- ♦further repeating said screening and identification steps, if at least 5% of the hyperimmune serum-reactive antigens have been identified in the repeated screening and identification steps only, until less than 5 % of the hyperimmune serum-reactive antigens are identified in a further repeating step only to obtain a complete set of hyperimmune serum-reactive antigens of a specific pathogen and
- ♦optionally isolating said hyperimmune serum-reactive antigens and producing said hyperimmune serum-reactive antigens by

chemical or recombinant methods.

The method according to the present invention mainly consists of three essential parts, namely 1. identifying hyperimmune serum sources containing specific antibodies against a given pathogen, 2. screening of suitable expression libraries with a suitable antibody preparation wherein candidate antigens (or antigenic fragments of such antigens) are selected, and - 3. in a second screening round, wherein the hyperimmune serum-reactive antigens are identified by their ability to bind to a relevant portion of individual antibody preparations from individual sera in order to show that these antigens are practically relevant and not only hyperimmune serum-reactive, but also widely immunogenic (i.e. that a lot of individual sera react with a given antigen). With the present method it is possible to provide a set of antigens of a given pathogen which is practically complete with respect to the chosen pathogen and the chosen serum. Therefore, a bias with respect to "wrong" antigen candidates or an incomplete set of antigens of a given pathogen is excluded by the present method.

Completeness of the antigen set of a given pathogen within the meaning of the present invention is, of course, dependent on the completeness of the expression libraries used in the present method and on the quality and size of serum collections (number of individual plasmas/sera) tested, both with respect to representability of the library and usefulness of the expression system. Therefore, preferred embodiments of the present method are characterized in that at least one of said expression libraries is selected from a ribosomal display library, a bacterial surface library and a proteome.

A serum collection used in the present invention should be tested against a panel of known antigenic compounds of a given pathogen, such as polysaccharide, lipid and proteinaceous components of the cell wall, cell membranes and cytoplasm, as well as secreted products. Preferably, three distinct serum collections are used: 1. With very stable antibody repertoire: normal adults, clinically healthy people, who overcome previous encounters or currently carriers of e.g. a given pathogen without acute disease and symptoms, 2. With antibodies induced acutely by the presence

- 7 -

of the pathogenic organism: patients with acute disease with different manifestations (e.g. *S. aureus* sepsis or wound infection, etc.), 3. With no specific antibodies at all (as negative controls): 5-8 months old babies who lost the maternally transmitted immunoglobulins 5-6 months after birth. Sera have to react with multiple pathogen-specific antigens in order to consider hyperimmune for a given pathogen (bacteria, fungus, worm or otherwise), and for that relevant in the screening method according to the present invention.

In the antigen identification programme for identifying a complete set of antigens according to the present invention, it is preferred that said at least three different expression libraries are at least a ribosomal display library, a bacterial surface library and a proteome. It has been observed that although all expression libraries may be complete, using only one or two expression libraries in an antigen identification programme will not lead to a complete set of antigens due to preferential expression properties of each of the different expression libraries. While it is therefore possible to obtain hyperimmune serum-reactive antigens by using only one or two different expression libraries, this might in many cases not finally result in the identification of a complete set of hyperimmune serum-reactive antigens. Of course, the term "complete" according to the present invention does not indicate a theoretical maximum but is indeed a practical completeness, i.e. that at least 95% of the practically relevant antigens or antigenic determinants have been identified of a given pathogen. The practical relevance is thereby defined by the occurrence of antibodies against given antigens in the patient population.

According to the present invention also serum pools or plasma fractions or other pooled antibody containing body fluids are "plasma pools".

An expression library as used in the present invention should at least allow expression of all potential antigens, e.g. all surface proteins of a given pathogen. With the expression libraries according to the present invention, at least one set of potential antigens of a given pathogen is provided, this set being prefera-

bly the complete theoretical complement of (poly-)peptides encoded by the pathogen's genome (i.e. genomic libraries as described in Example 2) and expressed either in a recombinant host (see Example 3) or in vitro (see Example 4). This set of potential antigens can also be a protein preparation, in the case of extracellular pathogens preferably a protein preparation containing surface proteins of said pathogen obtained from said pathogen grown under defined physiological conditions (see Example 5). While the genomic approach has the potential to contain the complete set of antigens, the latter one has the advantage to contain the proteins in their naturally state i.e. including for instance post-translational modifications or processed forms of these proteins, not obvious from the DNA sequence. These or any other sets of potential antigens from a pathogen, a tumor, an allergen or a tissue or host prone to auto-immunity are hereafter referred to as "expression library". Expression libraries of very different kinds may be applied in the course of the present invention. Suitable examples are given in e.g. Ausubel et al., 1994. Especially preferred are expression libraries representing a display of the genetic set of a pathogen in recombinant form such as in vitro translation techniques, e.g. ribosomal display, or prokaryotic expression systems, e.g. bacterial surface expression libraries or which resemble specific physiological expression states of a given pathogen in a given physiological state, such as a proteome.

Ribosome display is an established method in recombinant DNA technology, which is applicable for each specific pathogen for the sake of the present invention (Schaffitzel et al, 1999). Bacterial surface display libraries will be represented by a recombinant library of a bacterial host displaying a (total) set of expressed peptide sequences of a given pathogen on e.g. a selected outer membrane protein at the bacterial host membrane (Georgiou et al., 1997). Apart from displaying peptide or protein sequences in an outer membrane protein, other bacterial display techniques, such as bacteriophage display technologies and expression via exported proteins are also preferred as bacterial surface expression library (Forrer et al., 1999; Rodi and Makowski, 1993; Georgiou et al., 1997).

The antigen preparation for the first round of screening in the method according to the present invention may be derived from any source containing antibodies to a given pathogen. Preferably, if a plasma pool is used as a source for the antibody preparation, a human plasma pool is selected which comprises donors which had experienced or are experiencing an infection with the given pathogen. Although such a selection of plasma or plasma pools is in principle standard technology in for example the production of hyperimmunoglobulin preparations, it was surprising that such technologies have these effects as especially shown for the preferred embodiments of the present invention.

Preferably the expression libraries are genomic expression libraries of a given pathogen, or alternatively m-RNA, libraries. It is preferred that these genomic or m-RNA libraries are complete genomic or m-RNA expression libraries which means that they contain at least once all possible proteins, peptides or peptide fragments of the given pathogen are expressable. Preferably the genomic expression libraries exhibit a redundancy of at least 2x, more preferred at least 5x, especially at least 10x.

Preferably, the method according to the present invention comprises screening at least a ribosomal display library, a bacterial surface display library and a proteome with the antibody preparation and identifying antigens which bind in at least two, preferably which bind to all, of said screenings to antibodies in said antibody preparation. Such antigens may then be regarded extremely suited as hyperimmunogenic antigens regardless of their way of expression. Preferably the at least two screenings should at least contain the proteome, since the proteome always represents the antigens as naturally expressed proteins including post-translational modifications, processing, etc. which are not obvious from the DNA sequence.

□

The method according to the present invention may be applied to any given pathogen. Therefore, preferred pathogens are selected from the group of bacterial, viral, fungal and protozoan pathogens. The method according to the present invention is also applicable to cancer, i.e. for the identification of tumor-associated antigens, and for the identification of allergens or

- 10 -

antigens involved in auto-immune diseases. Of course, especially the recombinant methods are rather simple for pathogens having a small genome or a comparatively small number of expressed proteins (such as bacterial or viral pathogens) and are more complicated for complex (eukaryotic) organisms having large genomes. However, also such large genomic libraries of higher organism pathogens may well be analyzed with the method according to the present invention, at least in a faster and more reliable way than with known methods for identifying suitable antigens.

Preferred pathogens to be analyzed or which antigens are to be extracted, respectively, include human immunodeficiency virus (HIV), hepatitis A virus (HAV), hepatitis B virus (HBV), hepatitis C virus (HCV), Rous sarcoma virus (RSV), Epstein-Barr virus (EBV), influenza virus (IV), rotavirus (RV), *Staphylococcus aureus* (*S. aureus*), *Staphylococcus epidermidis* (*S. epidermidis*), *Chlamydia pneumoniae* (*C. pneumoniae*), *Chlamydia trachomatis* (*C. trachomatis*), *Mycobacterium tuberculosis* (*M. tuberculosis*), *Mycobacterium leprae* (*M. leprae*), *Streptococcus pneumoniae* (*S. pneumoniae*), *Streptococcus pyogenes* (*S. pyogenes*), *Streptococcus agalactiae* (*S. agalactiae*), *Enterococcus faecalis* (*E. faecalis*), *Bacillus anthracis* (*B. anthracis*), *Vibrio cholerae* (*V. cholerae*), *Borrelia burgdorferi* (*B. burgdorferi*), *Plasmodium* sp., fungal diseases such as *Pneumocystis carinii*, *Aspergillus* sp., *Cryptococcus* sp., *Candida albicans* or parasitic infections such as ascariasis (*Ascaris lumbricoides*) and taeniasis (*Taenia saginata*). The method according to the present invention is most applicable for bacteria, worms or candida.

As a model organism for the present application *Staphylococcus aureus* has been chosen to demonstrate the applicability and efficacy of the method according to the present invention. Especially with respect to the examples it is clear that the invention is easily transferable to all potential pathogens, especially the ones listed above.

It was surprising that the method according to the present invention allows an efficient and fast biological screening of a given pathogen, especially in view of the fact that only a small fraction of a patient's antibody repertoire is directed to a given

pathogen, even in a state where this pathogen is effectively defeated. It has been discovered within the course of the present invention, especially during performance of the S.aureus example that only 1-2% of the antibody repertoire of a patient having high titers against S.aureus are indeed antibodies directed against S.aureus. Moreover, over 70% of this specific 1% portion is directed against non-protein antigens, such as teichoic acid, so that only a total of 0.1% or less of the antibodies are directed to proteinaceous antigens.

One of the advantages of using recombinant expression libraries, especially ribosome display libraries and bacterial surface display libraries, is that the identified hyperimmune serum-reactive antigens may be instantly produced by expression of the coding sequences of the screened and selected clones expressing the hyperimmune serum-reactive antigens without further recombinant DNA technology or cloning steps necessary.

The hyperimmune serum-reactive antigens obtainable by the method according to the present invention may therefore be immediately finished to a pharmaceutical preparation, preferably by addition of a pharmaceutically acceptable carrier and/or excipient, immediately after its production (in the course of the second selection step), e.g. by expression from the expression library platform.

Preferably, the pharmaceutical preparation containing the hyperimmune serum-reactive antigen is a vaccine for preventing or treating an infection with the specific pathogen for which the antigens have been selected.

The pharmaceutical preparation may contain any suitable auxiliary substances, such as buffer substances, stabilisers or further active ingredients, especially ingredients known in connection of vaccine production.

A preferable carrier/or excipient for the hyperimmune serum-reactive antigens according to the present invention is a immunostimulatory compound for further stimulating the immune response to the given hyperimmune serum-reactive antigen. Pref-

erably the immunostimulatory compound in the pharmaceutical preparation according to the present invention is selected from the group of polycationic substances, especially polycationic peptides, immunostimulatory deoxynucleotides, alumn, Freund's complete adjuvans, Freund's incomplete adjuvans, neuroactive compounds, especially human growth hormone, or combinations thereof.

The polycationic compound(s) to be used according to the present invention may be any polycationic compound which shows the characteristic effects according to the WO 97/30721. Preferred polycationic compounds are selected from basic polypeptides, organic polycations, basic polyamino acids or mixtures thereof. These polyamino acids should have a chain length of at least 4 amino acid residues (see: Tuftsin as described in Goldman et al. (1983)). Especially preferred are substances like polylysine, polyarginine and polypeptides containing more than 20%, especially more than 50% of basic amino acids in a range of more than 8, especially more than 20, amino acid residues or mixtures thereof. Other preferred polycations and their pharmaceutical compositions are described in WO 97/30721 (e.g. polyethyleneimine) and WO 99/38528. Preferably these polypeptides contain between 20 and 500 amino acid residues, especially between 30 and 200 residues.

These polycationic compounds may be produced chemically or recombinantly or may be derived from natural sources.

Cationic (poly)peptides may also be anti-microbial with properties as reviewed in Ganz et al., 1999; Hancock, 1999. These (poly)peptides may be of prokaryotic or animal or plant origin or may be produced chemically or recombinantly (Andreu et al., 1998; Ganz et al., 1999; Simmaco et al., 1998). Peptides may also belong to the class of defensins (Ganz, 1999; Ganz et al., 1999). Sequences of such peptides can be, for example, be found in the Antimicrobial Sequences Database under the following internet address:

<http://www.bbcm.univ.trieste.it/~tossi/pag2.html>

Such host defence peptides or defensives are also a preferred form of the polycationic polymer according to the present inven-

tion. Generally, a compound allowing as an end product activation (or down-regulation) of the adaptive immune system, preferably mediated by APCs (including dendritic cells) is used as polycationic polymer.

Especially preferred for use as polycationic substance in the present invention are cathelicidin derived antimicrobial peptides or derivatives thereof (International patent application PCT/EP01/09529, incorporated herein by reference), especially antimicrobial peptides derived from mammal cathelicidin, preferably from human, bovine or mouse.

Polycationic compounds derived from natural sources include HIV-REV or HIV-TAT (derived cationic peptides, antennapedia peptides, chitosan or other derivatives of chitin) or other peptides derived from these peptides or proteins by biochemical or recombinant production. Other preferred polycationic compounds are cathelin or related or derived substances from cathelin. For example, mouse cathelin is a peptide which has the amino acid sequence $\text{NH}_2\text{-RLAGLLRKGGEKIGEKLLKKIGOKIKNFFQKLVPQPE-COOH}$. Related or derived cathelin substances contain the whole or parts of the cathelin sequence with at least 15-20 amino acid residues. Derivations may include the substitution or modification of the natural amino acids by amino acids which are not among the 20 standard amino acids. Moreover, further cationic residues may be introduced into such cathelin molecules. These cathelin molecules are preferred to be combined with the antigen. These cathelin molecules surprisingly have turned out to be also effective as an adjuvant for a antigen without the addition of further adjuvants. It is therefore possible to use such cathelin molecules as efficient adjuvants in vaccine formulations with or without further immunactivating substances.

Another preferred polycationic substance to be used according to the present invention is a synthetic peptide containing at least 2 KKK-motifs separated by a linker of 3 to 7 hydrophobic amino acids (International patent application PCT/EP01/12041, incorporated herein by reference).

Immunostimulatory deoxynucleotides are e.g. neutral or artificial

CpG containing DNA, short stretches of DNA derived from non-vertebrates or in form of short oligonucleotides (ODNs) containing non-methylated cytosine-guanine di-nucleotides (CpG) in a certain base context (e.g. Krieg et al., 1995) but also inosine containing ODNs (I-ODNs) as described in WO 01/93905.

Neuroactive compounds, e.g. combined with polycationic substances are described in WO 01/24822.

According to a preferred embodiment the individual antibody preparation for the second round of screening are derived from patients who have suffered from an acute infection with the given pathogen, especially from patients who show an antibody titer to the given pathogen above a certain minimum level, for example an antibody titer being higher than 80 percentile, preferably higher than 90 percentile, especially higher than 95 percentile of the human (patient or carrier) sera tested. Using such high titer individual antibody preparations in the second screening round allows a very selective identification of the hyperimmune serum-reactive antigens to the given pathogen.

It is important that the second screening with the individual antibody preparations (which may also be the selected serum) allows a selective identification of the hyperimmune serum-reactive antigens from all the promising candidates from the first round. Therefore, preferably at least 10 individual antibody preparations (i.e. antibody preparations (e.g. sera) from at least 10 different individuals having suffered from an infection to the chosen pathogen) should be used in identifying these antigens in the second screening round. Of course, it is possible to use also less than 10 individual preparations, however, selectivity of the step may not be optimal with a low number of individual antibody preparations. On the other hand, if a given hyperimmune serum-reactive antigen (or an antigenic fragment thereof) is recognized in at least 10 individual antibody preparations, preferably at least 30, especially at least 50 individual antibody preparations, identification of hyperimmune serum-reactive antigen is also selective enough for a proper identification. Hyperimmune serum-reactivity may of course be tested with as many individual preparations as possible (e.g. with more than 100 or even with

more than 1000).

Therefore, the relevant portion of the hyperimmune serum-reactive antibody preparation according to the method of the present invention should preferably be at least 10, more preferred at least 30, especially at least 50 individual antibody preparations. Alternatively (or in combination) hyperimmune serum-reactive antigen may preferably be also identified with at least 20%, preferably at least 30%, especially at least 40% of all individual antibody preparations used in the second screening round.

According to a preferred embodiment of the present invention, the sera from which the individual antibody preparations for the second round of screening are prepared (or which are used as antibody preparations), are selected by their titer against the specific pathogen (e.g. against a preparation of this pathogen, such as a lysate, cell wall components and recombinant proteins). Preferably, some are selected with a total IgA titer above 4000 U, especially above 6000 U, and/or an IgG titer above 10 000 U, especially above 12 000 U (U = units, calculated from the OD_{405nm} reading at a given dilution) when whole organism (total lysate or whole cells) is used as antigen in ELISA. Individual proteins with Ig titers of above 800-1000 U are specifically preferred for selecting the hyperimmune serum-reactive antigens according to the present invention only for total titer. The statement for individual proteins can be derived from Fig. 9.

According to the demonstration example which is also a preferred embodiment of the present invention the given pathogen is a Staphylococcus pathogen, especially Staphylococcus aureus and Staphylococcus epidermidis. Staphylococci are opportunistic pathogens which can cause illnesses which range from minor infections to life threatening diseases. Of the large number of Staphylococci at least 3 are commonly associated with human disease: S. aureus, S. epidermidis and rarely S. saprophyticus (Crossley and Archer, 1997). S. aureus has been used within the course of the present invention as an illustrative example of the way the present invention functions. Besides that, it is also an important organism with respect to its severe pathogenic impacts on humans. Staphylococcal infections are imposing an increasing

- 16 -

threat in hospitals worldwide. The appearance and disease causing capacity of Staphylococci are related to the wide-spread use of antibiotics which induced and continue to induce multi-drug resistance. For that reason medical treatment against Staphylococcal infections cannot rely only on antibiotics anymore.

Therefore, a tactic change in the treatment of these diseases is desperately needed which aims to prevent infections. Inducing high affinity antibodies of the opsonic and neutralizing type by vaccination helps the innate immune system to eliminate bacteria and toxins. This makes the method according to the present invention an optimal tool for the identification of staphylococcal antigenic proteins.

Every human being is colonized with *S. epidermidis*. The normal habitats of *S. epidermidis* are the skin and the mucous membrane. The major habitats of the most pathogenic species, *S. aureus*, are the anterior nares and perineum. Some individuals become permanent *S. aureus* carriers, often with the same strain. The carrier stage is clinically relevant because carriers undergoing surgery have more infections than noncarriers. Generally, the established flora of the nose prevents acquisition of new strains. However, colonization with other strains may occur when antibiotic treatment is given that leads to elimination of the susceptible carrier strain. Because this situation occurs in the hospitals, patients may become colonized with resistant nosocomial Staphylococci. These bacteria have an innate adaptability which is complemented by the widespread and sometimes inappropriate use of antimicrobial agents. Therefore hospitals provide a fertile environment for drug resistance to develop (close contact among sick patients, extensive use of antimicrobials, nosocomial infections). Both *S. aureus* and *S. epidermidis* have become resistant to many commonly used antibiotics, most importantly to methicillin (MRSA) and vancomycin (VISA). Drug resistance is an increasingly important public health concern, and soon many infections caused by staphylococci may be untreatable by antibiotics. In addition to its adverse effect on public health, antimicrobial resistance contributes to higher health care costs, since treating resistant infections often requires the use of more toxic and more expensive drugs, and can result in longer hospital stays for infected patients..

Moreover, even with the help of effective antibiotics, the most serious staphylococcal infections have 30-50 % mortality.

Staphylococci become potentially pathogenic as soon as the natural balance between microorganisms and the immune system gets disturbed, when natural barriers (skin, mucous membrane) are breached. The coagulase-positive *S. aureus* is the most pathogenic staphylococcal species, feared by surgeons for a long time. Most frequently it causes surgical wound infections, and induces the formation of abscesses. This local infection might become systemic, causing bacteraemia and sepsis. Especially after viral infections and in elderly, it can cause severe pneumonia. *S. aureus* is also a frequent cause of infections related to medical devices, such as intravascular and percutan catheters (endocarditis, sepsis, peritonitis), prosthetic devices (septic arthritis, osteomyelitis). *S. epidermidis* causes diseases mostly related to the presence of foreign body and the use of devices, such as catheter related infections, cerebrospinal fluid shunt infections, peritonitis in dialysed patients (mainly CAPD), endocarditis in individuals with prosthetic valves. This is exemplified in immunocompromised individuals such as oncology patients and premature neonates in whom coagulase-negative staphylococcal infections frequently occur in association with the use of intravascular device. The increase in incidence is related to the increased use of these devices and increasing number of immunocompromised patients.

Much less is known about *S. saprophyticus*, another coagulase-negative staphylococci, which causes acute urinary tract infection in previously healthy people. With a few exceptions these are women aged 16-25 years.

The pathogenesis of staphylococci is multifactorial. In order to initiate infection the pathogen has to gain access to the cells and tissues of the host, that is adhere. *S. aureus* expresses surface proteins that promote attachment to the host proteins such as laminin, fibronectin, elastin, vitronectin, fibrinogen and many other molecules that form part of the extracellular matrix (extracellular matrix binding proteins, ECMBP). *S. epider-*

- 18 -

midis is equipped with cell surface molecules which promote adherence to foreign material and through that mechanism establish infection in the host. The other powerful weapons staphylococci use are the secreted products, such as enterotoxins, exotoxins, and tissue damaging enzymes. The toxins kill or misguide immune cells which are important in the host defence. The several different types of toxins are responsible for most of the symptoms during infections.

Host defence against *S. aureus* relies mainly on innate immunological mechanisms. The skin and mucous membranes are formidable barriers against invasion by Staphylococci. However, once the skin or the mucous membranes are breached (wounds, percutan catheters, etc), the first line of nonadaptive cellular defence begins its co-ordinate action through complement and phagocytes, especially the polymorphonuclear leukocytes (PMNs). These cells can be regarded as the cornerstones in eliminating invading bacteria. As Staphylococci are primarily extracellular pathogens; the major anti-staphylococcal adaptive response comes from the humoral arm of the immune system, and is mediated through three major mechanisms: promotion of opsonization, toxin neutralisation, and inhibition of adherence. It is believed that opsonization is especially important, because of its requirement for an effective phagocytosis. For efficient opsonization the microbial surface has to be coated with antibodies and complement factors for recognition by PMNs through receptors to the Fc fragment of the IgG molecule or to activated C3b. After opsonization, staphylococci are phagocytosed and killed. Moreover, *S. aureus* can attach to endothelial cells, and be internalised by a phagocytosis-like process. Antibodies bound to specific antigens on the cell surface of bacteria serve as ligands for the attachment to PMNs and promote phagocytosis. The very same antibodies bound to the adhesins and other cell surface proteins are expected to neutralize adhesion and prevent colonization.

There is little clinical evidence that cell mediated immunity has a significant contribution in the defence against Staphylococci, yet one has to admit that the question is not adequately addressed. It is known, however, that *Staphylococcus aureus* utilizes an extensive array of molecular countermeasures to

manipulate the defensive microenvironment of the infected host by secreting polypeptides referred to as superantigens, which target the multireceptor communication between T-cells and antigen-presenting cells that is fundamental to initiating pathogen-specific immune clearance. Superantigens play a critical role in toxic shock syndrome and food poisoning, yet their function in routine infections is not well understood. Moreover, one cannot expect a long lasting antibody (memory) response without the involvement of T-cells. It is also known that the majority of the anti-staphylococcal antibodies are against T-cell independent antigens (capsular polysaccharides, lipoteichoic acid, peptidoglycan) without a memory function. The T-cell dependent proteinaceous antigens can elicit long-term protective antibody responses. These staphylococcal proteins and peptides have not yet been determined.

For all these above mentioned reasons, a tactic change on the war field against staphylococcal infections is badly needed. One way of combating infections is preventing them by active immunisation. Vaccine development against *S. aureus* has been initiated by several research groups and national institutions worldwide, but there is no effective vaccine approved so far. It has been shown that an antibody deficiency state contributes to staphylococcal persistence, suggesting that anti-staphylococcal antibodies are important in host defence. Antibodies - added as passive immunisation or induced by active vaccination - directed towards surface components could both prevent bacterial adherence, neutralize toxins and promote phagocytosis. A vaccine based on fibronectin binding protein induces protective immunity against mastitis in cattle and suggest that this approach is likely to work in humans (refs). Taking all this together it is suggestive that an effective vaccine should be composed of proteins or polypeptides, which are expressed by all strains and are able to induce high affinity, abundant antibodies against cell surface components of *S. aureus*. The antibodies should be IgG1 and/or IgG3 for opsonization, and any IgG subtype and IgA for neutralisation of adherence and toxin action. A chemically defined vaccine must be definitely superior compared to a whole cell vaccine (attenuated or killed), since components of *S. aureus* which paralyze TH cells (superantigens) or inhibit opsonization (protein A)

can be eliminated, and the individual proteins inducing protective antibodies can be selected. Identification of the relevant antigens help to generate effective passive immunisation (humanised monoclonal antibody therapy), which can replace human immunoglobulin administration with all its dangerous side-effects. Neonatal staphylococcal infections, severe septicemia and other life-threatening acute conditions are the primary target of passive immunisation. An effective vaccine offers great potential for patients facing elective surgery in general, and those receiving endovascular devices, in particular. Moreover, patients suffering from chronic diseases which decrease immune responses or undergoing continuous ambulatory peritoneal dialysis are likely to benefit from such a vaccine.

For the illustrative example concerning *Staphylococcus aureus* three different approaches have been employed in parallel. All three of these methods are based on the interaction of *Staphylococcus* proteins or peptides with the antibodies present in human sera with the method according to the present invention. This interaction relies on the recognition of epitopes within the proteins which can be short peptides (linear epitopes) or polypeptide domains (structural epitopes). The antigenic proteins are identified by the different methods using pools of pre-selected sera and - in the second screening round - by individual selected sera.

Following the high throughput screening, the selected antigenic proteins are expressed as recombinant proteins or in vitro translated products (in case it can not be expressed in prokaryotic expression systems), and tested in a series of ELISA and Western blotting assays for the assessment of immunogenicity with a large human serum collection (> 100 uninfected, > 50 patients sera). The preferred antigens are located on the cell surface or secreted, that is accessible extracellularly. Antibodies against the cell wall proteins (such as the Extracellular matrix binding proteins) are expected to serve double purposes: to inhibit adhesion and promote phagocytosis. The antibodies against the secreted proteins are beneficial in toxin neutralisation. It is also known that bacteria communicate with each other through secreted proteins. Neutralizing antibodies against these proteins

will interrupt growth promoting cross-talk between or within staphylococcal species. Bioinformatics (signal sequences, cell wall localisation signals, transmembrane domains) proved to be very useful in assessing cell surface localisation or secretion. The experimental approach includes the isolation of antibodies with the corresponding epitopes and proteins from human serum, and use them as reagents in the following assays: cell surface staining of staphylococci grown under different conditions (FACS, microscopy), determination of neutralizing capacity (toxin, adherence), and promotion of opsonization and phagocytosis (in vitro phagocytosis assay).

The recognition of linear epitopes by antibodies can be based on sequences as short as 4-5 aa. Of course it does not necessarily mean that these short peptides are capable of inducing the given antibody. *in vivo*. For that reason the defined epitopes, polypeptides and proteins may further be tested in animals (mainly in mice) for their capacity to induce antibodies against the selected proteins *in vivo*. The antigens with the proven capability to induce antibodies will be tested in animal models for the ability to prevent infections.

The antibodies produced against Staphylococci by the human immune system and present in human sera are indicative of the *in vivo* expression of the antigenic proteins and their immunogenicity.

Accordingly, novel hyperimmune serum-reactive antigens from Staphylococcus aureus or Staphylococcus epidermidis have been made available by the method according to the present invention. According to another aspect of the present invention the invention relates to a hyperimmune serum-reactive antigen selected from the group consisting of the sequences listed in any one of Tables 2a, 2b, 2c, 2d, 3, 4 and 5, especially selected from the group consisting of Seq.ID No. 56, 57, 59, 60, 67, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 85, 87, 88, 89, 90, 92, 95, 96, 97, 99, 100, 101, 102, 103, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 126, 128, 132, 134, 138, 140, 142, 151, 152, 154, 155 and hyperimmune fragments thereof. Accordingly, the present invention also relates to a hyperimmune serum-reactive antigen obtainable by the method according to the present invention

- 22 -

and being selected from the group consisting of the sequences listed in any one of Tables 2a, 2b, 2c, 2d, 3, 4 and 5, especially selected from the group consisting of Seq.ID No. 56, 57, 59, 60, 67, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 85, 87, 88, 89, 90, 92, 95, 96, 97, 99, 100, 101, 102, 103, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 126, 128, 132, 134, 138, 140, 142, 151, 152, 154, 155 and hyperimmune fragments thereof.

Antigens from *Staphylococcus aureus* and *Staphylococcus epidermidis* have been extracted by the method according to the present invention which may be used in the manufacture of a pharmaceutical preparation, especially for the manufacture of a vaccine against *Staphylococcus aureus* and *Staphylococcus epidermidis* infections. Examples of such hyperimmune serum-reactive antigens of *Staphylococcus aureus* and *Staphylococcus epidermidis* to be used in a pharmaceutical preparation are selected from the group consisting of the sequences listed in any one of Tables 2a, 2b, 2c, 2d, 3, 4 and 5, especially selected from the group consisting of Seq.ID No. 55, 56, 57, 58, 59, 60, 62, 66, 67, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 87, 88, 89, 90, 92, 94, 95, 96, 97, 99, 100, 101, 102, 103, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 126, 128, 130, 132, 134, 138, 140, 142, 151, 152, 154, 155, 158 and hyperimmune fragments thereof for the manufacture of a pharmaceutical preparation, especially for the manufacture of a vaccine against *Staphylococcus aureus* and *Staphylococcus epidermidis* infections.

A hyperimmune fragment is defined as a fragment of the identified antigen which is for itself antigenic or may be made antigenic when provided as a hapten. Therefore, also antigen or antigenic fragments showing one or (for longer fragments) only a few amino acid exchanges are enabled with the present invention, provided that the antigenic capacities of such fragments with amino acid exchanges are not severely deteriorated on the exchange(s). i.e. suited for eliciting an appropriate immune response in a individual vaccinated with this antigen and identified by individual antibody preparations from individual sera.

Preferred examples of such hyperimmune fragments of a hyperimmune serum-reactive antigen are selected from the group consisting of

peptides comprising the amino acid sequences of column "predicted immunogenic aa", "Location of identified immunogenic region" and "Serum reactivity with relevant region" of Tables 2a, 2b, 2c and 2d and the amino acid sequences of column "Putative antigenic surface areas" of Table 4 and 5, especially peptides comprising amino acid No. aa 12-29, 34-40, 63-71, 101-110, 114-122, 130-138, 140-195, 197-209, 215-229, 239-253, 255-274 and 39-94 of Seq.ID No. 55,

aa 5-39, 111-117, 125-132, 134-141, 167-191, 196-202, 214-232, 236-241, 244-249, 292-297, 319-328, 336-341, 365-380, 385-391, 407-416, 420-429, 435-441, 452-461, 477-488, 491-498, 518-532, 545-556, 569-576, 581-587, 595-602, 604-609, 617-640, 643-651, 702-715, 723-731, 786-793, 805-811, 826-839, 874-889, 37-49, 63-77 and 274-334, of Seq.ID No.56,

aa 28-55, 82-100, 105-111, 125-131, 137-143, 1-49, of Seq.ID No. 57,

aa 33-43, 45-51, 57-63, 65-72, 80-96, 99-110, 123-129, 161-171, 173-179, 185-191, 193-200, 208-224, 227-246, 252-258, 294-308, 321-329, 344-352, 691-707, 358-411 and 588-606, of Seq.ID No. 58, aa 16-38, 71-77, 87-94, 105-112, 124-144, 158-164, 169-177, 180-186, 194-204, 221-228, 236-245, 250-267, 336-343, 363-378, 385-394, 406-412, 423-440, 443-449, 401-494, of Seq.ID No. 59,

aa 18-23, 42-55, 69-77, 85-98, 129-136, 182-188, 214-220, 229-235, 242-248, 251-258, 281-292, 309-316, 333-343, 348-354, 361-367, 393-407, 441-447, 481-488, 493-505, 510-515, 517-527, 530-535, 540-549, 564-583, 593-599, 608-621, 636-645, 656-670, 674-687, 697-708, 726-734, 755-760, 765-772, 785-792, 798-815, 819-824, 826-838, 846-852, 889-904, 907-913, 932-939, 956-964, 982-1000, 1008-1015, 1017-1024, 1028-1034, 1059-1065, 1078-1084, 1122-1129, 1134-1143, 1180-1186, 1188-1194, 1205-1215, 1224-1230, 1276-1283, 1333-1339, 1377-1382, 1415-1421, 1448-1459, 1467-1472, 1537-1545, 1556-1566, 1647-1654, 1666-1675, 1683-1689, 1722-1737, 1740-1754, 1756-1762, 1764-1773, 1775-1783, 1800-1809, 1811-1819, 1839-1851, 1859-1866, 1876-1882, 1930-1939, 1947-1954, 1978-1985, 1999-2007, 2015-2029, 2080-2086, 2094-2100, 2112-2118, 2196-2205, 2232-2243, 198-258, 646-727 and 2104-2206, of Seq.ID No. 60,

aa 10-29, 46-56, 63-74, 83-105, 107-114, 138-145, 170-184, 186-193, 216-221, 242-248, 277-289, 303-311, 346-360, 379-389, 422-428, 446-453, 459-469, 479-489, 496-501, 83-156, of Seq.ID No. 62,

- 24 -

aa 14-22, 32-40, 52-58, 61-77, 81-93, 111-117, 124-138, 151-190, 193-214, 224-244, 253-277, 287-295, 307-324, 326-332, 348-355, 357-362, 384-394, 397-434, 437-460, 489-496, 503-510, 516-522, 528-539, 541-547, 552-558, 563-573, 589-595, 602-624, 626-632, 651-667, 673-689, 694-706, 712-739, 756-790, 403-462, of Seq.ID No. 66,

aa 49-56, 62-68, 83-89, 92-98, 109-115, 124-131, 142-159, 161-167, 169-175, 177-188, 196-224, 230-243, 246-252, 34-46, of Seq.ID No. 67,

aa 11-20, 26-47, 69-75, 84-92, 102-109, 119-136, 139-147, 160-170, 178-185, 190-196, 208-215, 225-233, 245-250, 265-272, 277-284, 300-306, 346-357, 373-379, 384-390, 429-435, 471-481, 502-507, 536-561, 663-688, 791-816, 905-910, 919-933, 977-985, 1001-1010, 1052-1057, 1070-1077, 1082-1087, 1094-1112, 493-587, 633-715 and 704-760, of Seq.ID No.70,

aa.6-20, 53-63, 83-90, 135-146, 195-208, 244-259, 263-314, 319-327, 337-349, 353-362, 365-374, 380-390, 397-405, 407-415, 208-287 and 286-314, of Seq.ID No. 71,

aa 10-26, 31-43, 46-58, 61-66, 69-79, 85-92, 100-115, 120-126, 128-135, 149-155, 167-173, 178-187, 189-196, 202-222, 225-231, 233-240, 245-251, 257-263, 271-292, 314-322, 325-334, 339-345, 59-74, of Seq.ID No. 72,

aa 4-9, 15-26, 65-76, 108-115, 119-128, 144-153, 38-52 and 66-114, of Seq.ID No. 73,

aa 5-22, 42-50, 74-81, 139-145, 167-178, 220-230, 246-253, 255-264, 137-237 and 250-267, of Seq.ID No. 74,

aa 10-26, 31-44, 60-66, 99-104, 146-153, 163-169, 197-205, 216-223, 226-238, 241-258, 271-280, 295-315, 346-351, 371-385, 396-407, 440-446, 452-457, 460-466, 492-510, 537-543, 546-551, 565-582, 590-595, 635-650, 672-678, 686-701, 705-712, 714-721, 725-731, 762-768, 800-805, 672-727, of Seq.ID No. 75,

aa 5-32, 35-48, 55-76, of Seq.ID No. 76,

aa 7-35, 54-59, 247-261, 263-272, 302-320, 330-339, 368-374, 382-411, 126-143 and 168-186, of Seq.ID No. 77,

aa 5-24, 88-94, 102-113, 132-143, 163-173, 216-224, 254-269, 273-278, 305-313, 321-327, 334-341, 31-61 and 58-74, of Seq.ID No. 78,

aa 16-24, 32-39, 43-49, 64-71, 93-99, 126-141, 144-156, 210-218, 226-233, 265-273, 276-284, 158-220, of Seq.ID No. 79,

aa 49-72, 76-83, 95-105, 135-146, 148-164, 183-205, 57-128, of

Seq.ID No. 80,

aa 6-15, 22-32, 58-73, 82-88, 97-109, 120-131, 134-140, 151-163, 179-185, 219-230, 242-255, 271-277, 288-293, 305-319, 345-356, 368-381, 397-406, 408-420, 427-437, 448-454, 473-482, 498-505, 529-535, 550-563, 573-580, 582-590, 600-605, 618-627, 677-685, 718-725, 729-735, 744-759, 773-784, 789-794, 820-837, 902-908, 916-921, 929-935, 949-955, 1001-1008, 1026-1032, 1074-1083, 1088-1094, 1108-1117, 1137-1142, 1159-1177, 1183-1194, 1214-1220, 1236-1252, 1261-1269, 1289-1294, 1311-1329, 1336-1341, 1406-1413, 1419-1432, 1437-1457, 1464-1503, 1519-1525, 1531-1537, 1539-1557, 1560-1567, 1611-1618, 1620-1629, 1697-1704, 1712-1719, 1726-1736, 1781-1786, 1797-1817, 1848-1854, 1879-1890, 1919-1925, 1946-1953, 1974-1979, 5 to 134, of Seq.ID No. 81,

aa 6-33, 40-46, 51-59, 61-77, 84-104, 112-118, 124-187, 194-248, 252-296, 308-325, 327-361, 367-393, 396-437, 452-479, 484-520, 535-545, 558-574, 582-614, 627-633, 656-663, 671-678, 698-704, 713-722, 725-742, 744-755, 770-784, 786-800, 816-822, 827-837, 483-511, of Seq.ID No. 82,

aa 4-19, 57-70, 79-88, 126-132, 144-159, 161-167, 180-198, 200-212, 233-240, 248-255, 276-286, 298-304, 309-323, 332-346, 357-366, 374-391, 394-406, 450-456, 466-473, 479-487, 498-505, 507-519, 521-530, 532-540, 555-565, 571-581, 600-611, 619-625, 634-642, 650-656, 658-665, 676-682, 690-699, 724-733, 740-771, 774-784, 791-797, 808-815, 821-828, 832-838, 876-881, 893-906, 922-929, 938-943, 948-953, 969-976, 1002-1008, 1015-1035, 1056-1069, 1105-1116, 1124-1135, 1144-1151, 1173-1181, 1186-1191, 1206-1215, 1225-1230, 1235-1242, 6-66, 65-124 and 590-604, of Seq.ID No. 83,

aa 5-32, 66-72, 87-98, 104-112, 116-124, 128-137, 162-168, 174-183, 248-254, 261-266, 289-303, 312-331, 174-249, of Seq.ID No. 84,

aa 4-21, 28-40, 45-52, 59-71, 92-107, 123-137, 159-174, 190-202, 220-229, 232-241, 282-296, 302-308, 312-331, 21-118, of Seq.ID No. 85,

aa 9-28, 43-48, 56-75, 109-126, 128-141, 143-162, 164-195, 197-216, 234-242, 244-251, 168-181, of Seq.ID No. 87,

aa 4-10, 20-42, 50-86, 88-98, 102-171, 176-182, 189-221, 223-244, 246-268, 276-284, 296-329, 112-188, of Seq.ID No. 88,

aa 4-9, 13-24, 26-34, 37-43, 45-51, 59-73, 90-96, 99-113, 160-173, 178-184, 218-228, 233-238, 255-262, 45-105, 103-166 and 66-153, of Seq.ID No. 89,

aa 13-27, 42-63, 107-191, 198-215, 218-225, 233-250, 474-367, of Seq.ID No. 90;

aa 26-53, 95-123, 164-176, 189-199, 8-48, of Seq.ID No. 92,

aa 7-13, 15-23, 26-33, 68-81, 84-90, 106-117, 129-137, 140-159, 165-172, 177-230, 234-240, 258-278, 295-319, 22-56, 23-99, 97-115, 233-250 and 245-265, of Seq.ID No. 94,

aa 13-36, 40-49, 111-118, 134-140, 159-164, 173-183, 208-220, 232-241, 245-254, 262-271, 280-286, 295-301, 303-310, 319-324, 332-339, 1-85, 54-121 and 103-185, of Seq.ID No. 95,

aa 39-44, 46-80, 92-98, 105-113, 118-123, 133-165, 176-208, 226-238, 240-255, 279-285, 298-330, 338-345, 350-357, 365-372, 397-402, 409-415, 465-473, 488-515, 517-535, 542-550, 554-590, 593-601, 603-620, 627-653, 660-665, 674-687, 698-718, 726-739, 386-402, of Seq.ID No. 96,

aa 5-32, 34-49, 1-43, of Seq.ID No. 97,

aa 10-27, 37-56, 64-99, 106-119, 121-136, 139-145, 148-178, 190-216, 225-249, 251-276, 292-297, 312-321, 332-399, 403-458, 183-200, of Seq.ID No. 99,

aa 5-12, 15-20, 43-49, 94-106, 110-116, 119-128, 153-163, 175-180, 185-191, 198-209, 244-252, 254-264, 266-273, 280-288, 290-297, 63-126, of Seq.ID No. 100,

aa 5-44, 47-55, 62-68, 70-78, 93-100, 128-151, 166-171, 176-308, 1-59, of Seq.ID No. 101,

aa 18-28, 36-49, 56-62, 67-84, 86-95, 102-153, 180-195, 198-218, 254-280, 284-296, 301-325, 327-348, 353-390, 397-402, 407-414, 431-455, 328-394, of Seq.ID No. 102,

aa 7-37, 56-71, 74-150, 155-162, 183-203, 211-222, 224-234, 242-272, 77-128, of Seq.ID No. 103,

aa 34-58, 63-69, 74-86, 92-101, 130-138, 142-150, 158-191, 199-207, 210-221, 234-249, 252-271, 5-48, of Seq.ID No. 104,

aa 12-36, 43-50, 58-65, 73-78, 80-87, 108-139, 147-153, 159-172, 190-203, 211-216, 224-232, 234-246, 256-261, 273-279, 286-293, 299-306, 340-346, 354-366, 167-181, of Seq.ID No. 106,

aa 61-75, 82-87, 97-104, 113-123, 128-133, 203-216, 224-229, 236-246, 251-258, 271-286, 288-294, 301-310, 316-329, 337-346, 348-371, 394-406, 418-435, 440-452 of Seq.ID No. 112,

aa 30-37, 44-55, 83-91, 101-118, 121-128, 136-149, 175-183, 185-193, 206-212, 222-229, 235-242 of Seq.ID No. 114,

aa 28-38, 76-91, 102-109, 118-141, 146-153, 155-161, 165-179, 186-202, 215-221, 234-249, 262-269, 276-282, 289-302, 306-314,

- 27 -

321-326, 338-345, 360-369, 385-391 of Seq.ID No. 116,
aa 9-33, 56-62, 75-84, 99-105, 122-127, 163-180, 186-192, 206-228, 233-240, 254-262, 275-283, 289-296, 322-330, 348-355, 416-424, 426-438, 441-452, 484-491, 522-528, 541-549, 563-569, 578-584, 624-641, 527-544, of Seq.ID No. 142,
aa 37-42, 57-62, 121-135, 139-145, 183-190, 204-212, 220-227, 242-248, 278-288, 295-30, 304-309, 335-341, 396-404, 412-433, 443-449, 497-503, 505-513, 539-545, 552-558, 601-617, 629-649, 702-711, 736-745, 793-804, 814-829, 843-858, 864-885, 889-895, 905-913, 919-929, 937-943, 957-965, 970-986, 990-1030, 1038-1049, 1063-1072, 1080-1091, 1093-1116, 1126-1136, 1145-1157, 1163-1171, 1177-1183, 1189-1196, 1211-1218, 1225-1235, 1242-1256, 1261-1269, 624-684, of Seq.ID No. 151,
aa 8-23, 31-38, 42-49, 61-77, 83-90, 99-108, 110-119, 140-147, 149-155, 159-171, 180-185, 189-209, 228-234, 245-262, 264-275, 280-302, 304-330, 343-360, 391-409, 432-437, 454-463, 467-474, 478-485, 515-528, 532-539, 553-567, 569-581, 586-592, 605-612, 627-635, 639-656, 671-682, 700-714, 731-747, 754-770, 775-791, 797-834, 838-848, 872-891, 927-933, 935-942, 948-968, 976-986, 1000-1007, 1029-1037, 630-700, of Seq.ID No. 152,
aa 17-25, 27-55, 84-90, 95-101, 115-121, 55-101, of Seq.ID No. 154,
aa 13-28, 40-46, 69-75, 86-92, 114-120, 126-137, 155-172, 182-193, 199-206, 213-221, 232-238, 243-253, 270-276, 284-290, 22-100, of Seq.ID No. 155 and
aa 7-19, 46-57, 85-91, 110-117, 125-133, 140-149, 156-163, 198-204, 236-251, 269-275, 283-290, 318-323, 347-363, 9-42 and 158-174, of Seq.ID No. 158,
aa 7-14, 21-30, 34-50, 52-63, 65-72, 77-84, 109-124, 129-152, 158-163, 175-190, 193-216, 219-234 of Seq.ID.No. 168,
aa 5-24, 38-44, 100-106, 118-130, 144-154, 204-210, 218-223, 228-243, 257-264, 266-286, 292-299 of Seq.ID.No. 174,
aa 29-44, 74-83, 105-113, 119-125, 130-148, 155-175, 182-190, 198-211, 238-245 of Seq.ID.No. 176, and fragments comprising at least 6, preferably more than 8, especially more than 10 aa of said sequences. All these fragments individually and each independently form a preferred selected aspect of the present invention.

Especially suited helper epitopes may also be derived from these

antigens. Especially preferred helper epitopes are peptides comprising fragments selected from the peptides mentioned in column "Putative antigenic surface areas" in Tables 4 and 5 and from the group of aa 6-40, 583-598, 620-646 and 871-896 of Seq.ID.No.56, aa 24-53 of Seq.ID.No.70, aa 240-260 of Seq.ID.No.74, aa 1660-1682 and 1746-1790 of Seq.ID.No. 81, aa 1-29, 680-709, and 878-902 of Seq.ID.No. 83, aa 96-136 of Seq.ID.No. 89, aa 1-29, 226-269 and 275-326 of Seq.ID.No. 94, aa 23-47 and 107-156 of Seq.ID.No. 114 and aa 24-53 of Seq.ID.No. 142 and fragments thereof being T-cell epitopes.

According to another aspect, the present invention relates to a vaccine comprising such a hyperimmune serum-reactive antigen or a fragment thereof as identified above for *Staphylococcus aureus* and *Staphylococcus epidermidis*. Such a vaccine may comprise one or more antigens against *S. aureus* or *S. epidermidis*. Optionally, such *S. aureus* or *S. epidermidis* antigens may also be combined with antigens against other pathogens in a combination vaccine. Preferably this vaccine further comprises an immunostimulatory substance, preferably selected from the group comprising polycationic polymers, especially polycationic peptides, immunostimulatory deoxynucleotides (ODNs), neuroactive compounds, especially human growth hormone, alum, Freund's complete or incomplete adjuvans or combinations thereof. Such a vaccine may also comprise the antigen displayed on a surface display protein platform on the surface of a genetically engineered microorganism such as *E. coli*.

According to another aspect, the present invention relates to specific preparations comprising antibodies raised against at least one of the *Staphylococcus aureus* and *Staphylococcus epidermidis* antigens or *Staphylococcus aureus* and *Staphylococcus epidermidis* antigen fragments as defined above. These antibodies are preferably monoclonal antibodies.

Methods for producing such antibody preparations, polyclonal or monoclonal, are well available to the man skilled in the art and properly described in the prior art. A preferred method for producing such monoclonal antibody preparation is characterized by the following steps

- 29 -

- initiating an immune response in a non human animal by administering a Staphylococcus antigen or a fragment thereof, as defined above, to said animal,
- removing the spleen or spleen cells from said animal,
- producing hybridoma cells of said spleen or spleen cells,
- selecting and cloning hybridoma cells specific for said antigen and
- producing the antibody preparation by cultivation of said cloned hybridoma cells and optionally further purification steps.

Preferably, removing of the spleen or spleen cells is connected with killing said animal.

Monoclonal antibodies and fragments thereof can be chimerized or humanized (Graziano et al. 1995) to enable repeated administration. Alternatively human monoclonal antibodies and fragments thereof can be obtained from phage-display libraries (McGuinness et al., 1996) or from transgenic animals (Brüggemann et al., 1996).

A preferred method for producing polyclonal antibody preparations to said Staphylococcus aureus or Staphylococcus epidermidis antigens identified with the present invention is characterized by the following steps

- initiating an immune response in a non human animal by administering a Staphylococcus antigen or a fragment thereof, as defined above, to said animal,
- removing an antibody containing body fluid from said animal,
- and
- producing the antibody preparation by subjecting said antibody containing body fluid to further purification steps.

These monoclonal or polyclonal antibody preparations may be used for the manufacture of a medicament for treating or preventing diseases due to staphylococcal infection. Moreover, they may be used for the diagnostic and imaging purposes.

The method is further described in the following examples and in the figures, but should not be restricted thereto.

- 30 -

Figure 1 shows the pre-selection of sera based on anti-staphylococcal antibody titers measured by ELISA.

Figure 2 shows the size distribution of DNA fragments in the LSA50/6 library in pMAL4.1.

Figure 3 shows the MACS selection with biotinylated human serum. The LSA50/6 library in pMAL9.1 was screened with 10 µg biotinylated, human serum in the first (A) and with 1 µg in the second selection round (B). P.serum, patient serum; B.serum, infant serum. Number of cells selected after the 2nd and 3rd elution are shown for each selection round.

Figure 4 shows the serum reactivity with specific clones isolated by bacterial surface display as analyzed by Western blot analysis with patient serum at a dilution of 1 : 5000.

Figure 5 shows peptide ELISA with serum from patients and healthy individuals with an epitope identified by ribosome display.

Figure 6 shows representative 2D Immunoblot of *S. aureus* surface proteins detected with human sera. 800 µg protein from *S. aureus*/COL grown on BHI were resolved by IEF (pI 4-7) and SDS-PAGE (9-16%), and subsequently transferred to PVDF membrane. After blocking, the membrane was incubated with sera IC35 (1:20,000). Binding of serum IgG was visualized by an anti-human IgG/HRPO conjugate and ECL development.

Figure 7 demonstrates a representative 2D gel showing *S. aureus* surface proteins stained by Coomassie Blue. 1 mg protein from *S. aureus*/COL were resolved by IEF (pI 4-7) and SDS-PAGE (9-16%). Spots selected for sequencing after serological proteome analysis are marked.

Figures 8A and 8B show the structure of LPXTG cell wall proteins.

Figure 9 shows the IgG response in uninfected (N, C) and infected (P) patients to LPXTGV, a novel antigen and probable surface adhesin of *S. aureus*, discovered by both the inventive bacterial

surface-display and proteomics approaches.

Figure 10 shows the surface staining of *S. aureus* with purified anti-LPXTGV IgGs.

Figure 11 shows a 2D gel where *S. aureus* surface proteins are stained by Coomassie Blue (left). 1 mg protein from *S. aureus*/agr grown to early log phase was resolved by IEF (pI 6-11) and SDS-PAGE (9-16%). Spots selected for sequencing after serological proteome analysis are marked. Corresponding 2D-immunoblot (right). 800 µg protein from the same preparation was resolved in parallel by 2DE, and subsequently transferred to PVDF membrane. After blocking, the membrane was incubated with the P-pool (1:10,000). Binding of serum IgG was visualized by an anti-human IgG/HRPO conjugate and ECL development.

EXAMPLES

Discovery of novel *Staphylococcus aureus* antigens

Example 1: Preparation of antibodies from human serum

The antibodies produced against staphylococci by the human immune system and present in human sera are indicative of the in vivo expression of the antigenic proteins and their immunogenicity. These molecules are essential for the identification of individual antigens in the approach as the present invention which is based on the interaction of the specific anti-staphylococcal antibodies and the corresponding *S. aureus* peptides or proteins. To gain access to relevant antibody repertoires, human sera were collected from I. patients with acute *S. aureus* infections, such as bacteraemia, sepsis, infections of intravascular and percutan catheters and devices, wound infections, and superficial and deep soft tissue infection. *S. aureus* was shown to be the causative agent by medical microbiological tests. II. A collection of serum samples from uninfected adults was also included in the present analysis, since staphylococcal infections are common, and antibodies are present as a consequence of natural immunization from

previous encounters with Staphylococci from skin and soft tissue infections (furunculus, wound infection, periodontitis etc.).

The sera were characterized for *S. aureus* antibodies by a series of ELISA assays. Several staphylococcal antigens have been used to prove that the titer measured was not a result of the sum of cross-reactive antibodies. For that purpose not only whole cell *S. aureus* (protein A deficient) extracts (grown under different conditions) or whole bacteria were used in the ELISA assays, but also individual cell wall components, such as lipoteichoic acid and peptidoglycan isolated from *S. aureus*. More importantly, a recombinant protein collection was established representing known staphylococcal cell surface proteins for the better characterization of the present human sera collections.

Recently it was reported that not only IgG, but also IgA serum antibodies can be recognized by the FcRIII receptors of PMNs and promote opsonization (Phillips-Quagliata et al., 2000; Shibuya et al., 2000). The primary role of IgA antibodies is neutralization, mainly at the mucosal surface. The level of serum IgA reflects the quality, quantity and specificity of the dimeric secretory IgA. For that reason the serum collection was not only analyzed for anti-staphylococcal IgG, but also for IgA levels. In the ELISA assays highly specific secondary reagents were used to detect antibodies from the high affinity types, such as IgG and IgA, and avoided IgM. Production of IgM antibodies occurs during the primary adaptive humoral response, and results in low affinity antibodies, while IgG and IgA antibodies had already undergone affinity maturation, and are more valuable in fighting or preventing disease

Experimental procedures

Enzyme linked immune assay (ELISA). ELISA plates were coated with 2-10 µg/ml of the different antigens in coating buffer (sodium carbonate pH 9.2). Serial dilutions of sera (100-100.000) were made in TBS-BSA. Highly specific (cross-adsorbed) HRP (Horse Radish Peroxidase)-labeled anti-human IgG or anti-human IgA secondary antibodies (Southern Biotech) were used according to the manufacturers' recommendations (~ 2.000x). Antigen-antibody complexes were quantified by measuring the conversion of the sub-

- 33 -

strate (ABTS) to colored product based on OD_{405nm} readings in an automated ELISA reader (Wallace Victor 1420). The titers were compared at given dilution where the dilution response was linear (Table 1). The ~ 100 sera were ranked based on the reactivity against multiple staphylococcal components, and the highest ones (above 90 percentile) were selected for further analysis in antigen identification. Importantly, the anti-staphylococcal antibodies from sera of clinically healthy individuals proved to be very stable, giving the same high ELISA titers against all the staphylococcal antigens measured after 3, 6 and 9 months (data not shown). In contrast, anti-S. aureus antibodies in patients decrease, then disappear after a couple of weeks following the infection (Coloque-Navarro et al, 1998). However, antibodies from patients are very important, since these are direct proof of the in vivo expression of the bacterial antigens tested in or ELISAs or identified as immunogenic during the screens according to the present invention.

This comprehensive approach followed during antibody characterization is unique, and led to unambiguous identification of anti-staphylococcal hyperimmune sera.

Purification of antibodies for genomic screening. Five sera from both the patient and the noninfected group were selected based on the overall anti-staphylococcal titers. Antibodies against E. coli proteins were removed by either incubating the heat inactivated sera with whole cell E. coli (DH5a, transformed with pHIE11, grown under the same condition as used for bacterial display) or with E. coli lysate affinity chromatography for ribosome display. Highly enriched preparations of IgG from the pooled, depleted sera were generated by protein G affinity chromatography, according to the manufacturer's instructions (UltraLink Immobilized Protein G, Pierce). IgA antibodies were purified also by affinity chromatography using biotin-labeled anti-human IgA (Southern Biotech) immobilized on Streptavidin-agarose (GIBCO BRL). The efficiency of depletion and purification was checked by SDS-PAGE, Western blotting, ELISA, and protein concentration measurements. For proteomics, the depletion the IgG and IgA preparation was not necessary, since the secondary reagent ensured the specificity.

Example 2: Generation of highly random, frame-selected, small-fragment, genomic DNA libraries of *Staphylococcus aureus***Experimental procedures**

Preparation of staphylococcal genomic DNA. This method was developed as a modification of two previously published protocols (Sohail, 1998, Betley et al., 1984) and originally specifically adapted for the methicillin resistant *Staphylococcus aureus* strain COL to obtain genomic DNA in high quality and large scale. 500 ml BHI (Brain Heart Infusion) medium supplemented with 5 µg/ml Tetracycline was inoculated with bacteria from a frozen stab and grown with aeration and shaking for 18 h at 37°. The culture was then harvested in two aliquots of 250 ml each, centrifuged with 1600 x g for 15 min and the supernatant was removed. Bacterial pellets were carefully re-suspended in 26 ml of 0.1 mM Tris-HCl, pH 7.6 and centrifuged again with 1600 x g for 15 min. Pellets were re-suspended in 20 ml of 1 mM Tris-HCl, pH 7.6, 0.1 mM EDTA and transferred into sterile 50 ml polypropylene tubes. 1 ml of 10 mg/ml heat treated RNase A and 200 U of RNase T1 were added to each tube and the solution mixed carefully. 250 µl of Lysostaphin (10 mg/ml stock, freshly prepared in ddH₂O) was then added to the tubes, mixed thoroughly and incubated at 40°C for 10 min in a shaking water bath under continuous agitation. After the addition of 1 ml 10 % SDS, 40 µl of Proteinase K (25 mg/ml stock) and 100 µl of Pronase (10 mg/ml), tubes were again inverted several times and incubated at 40°C for 5 min in a shaking water bath. 3.75 ml of 5 M NaCl and 2.5 ml of cetyl trimethyl-ammonium bromide solution (CTAB) (10% w/v, 4% w/v NaCl) were then added and tubes were further incubated at 65°C in a shaking water bath for 10 min. Samples were cooled to room temperature and extracted with PhOH/CHCl₃/IAA (25:24:1) and with CHCl₃/IAA (24:1). Aqueous phases were carefully collected and transferred to new sterile 50-ml tubes. To each tube 1.5 ml of Strataclean™ Resin was added, mixed gently but thoroughly and incubated for one minute at room temperature. Samples were centrifuged and the upper layers containing the DNA were collected into clean 50ml-tubes. DNA was precipitated at room temperature by adding 0.6 x volume of Isopropanol, spooled from the solution with a sterile Pasteur pipette and transferred into tubes con-

- 35 -

taining 80% ice cold ethanol. DNA was recovered by centrifuging the precipitates with 10-12 000 x g, then dried on air and dissolved in ddH₂O.

Preparation of small genomic DNA fragments. Genomic DNA fragments were mechanically sheared into fragments ranging in size between 150 and 300 bp using a cup-horn sonicator (Bandelin Sonoplus UV 2200 sonicator equipped with a BB5 cup horn, 10 sec. pulses at 100 % power output) or into fragments of size between 50 and 70 bp by mild DNase I treatment (Novagen). It was observed that sonication yielded a much tighter fragment size distribution when breaking the DNA into fragments of the 150-300 bp size range. However, despite extensive exposure of the DNA to ultrasonic wave-induced hydromechanical shearing force, subsequent decrease in fragment size could not be efficiently and reproducibly achieved. Therefore, fragments of 50 to 70 bp in size were obtained by mild DNase I treatment using Novagen's shotgun cleavage kit. A 1:20 dilution of DNase I provided with the kit was prepared and the digestion was performed in the presence of MnCl₂ in a 60 µl volume at 20°C for 5 min to ensure double-stranded cleavage by the enzyme. Reactions were stopped with 2 µl of 0.5 M EDTA and the fragmentation efficiency was evaluated on a 2% TAE-agarose gel. This treatment resulted in total fragmentation of genomic DNA into near 50-70 bp fragments. Fragments were then blunt-ended twice using T4 DNA Polymerase in the presence of 100 µM each of dNTPs to ensure efficient flushing of the ends. Fragments were used immediately in ligation reactions or frozen at -20°C for subsequent use.

Description of the vectors. The vector pMAL4.1 was constructed on a pEH1 backbone (Hashemzadeh-Bonehi et al., 1998) with the Kanamycin resistance gene. In addition it harbors a β -lactamase (bla) gene cloned into the multiple cloning site. The bla gene is preceded by the leader peptide sequence of ompA to ensure efficient secretion across the cytoplasmic membrane. A Sma I restriction site serves for library insertion. The Sma I site is flanked by an upstream FseI site and a downstream NotI site which were used for recovery of the selected fragments. The three restriction sites are inserted after the ompA leader sequence in such a way that the bla gene is transcribed in the -1 reading frame result-

ing in a stop codon 15 bp after the NotI site. A +1 bp insertion restores the bla ORF so that b-lactamase protein is produced with a consequent gain of Ampicillin resistance.

The vector pMAL4.31 was constructed on a pASK-IBA backbone (Skerra, 1994) with the b-lactamase gene exchanged with the Kana-mycin resistance gene. In addition it harbors a b-lactamase (bla) gene cloned into the multiple cloning site. The sequence encoding mature b-lactamase is preceded by the leader peptide sequence of ompA to allow efficient secretion across the cytoplasmic membrane. Furthermore a sequence encoding the first 12 amino acids (spacer sequence) of mature b-lactamase follows the ompA leader peptide sequence to avoid fusion of sequences immediately after the leader peptidase cleavage site, since e.g. clusters of positive charged amino acids in this region would decrease or abolish translocation across the cytoplasmic membrane (Kajava et al., 2000). A SmaI restriction site serves for library insertion. The SmaI site is flanked by an upstream FseI site and a downstream NotI site which were used for recovery of the selected fragment. The three restriction sites are inserted after the sequence encoding the 12 amino acid spacer sequence in such a way that the bla gene is transcribed in the -1 reading frame resulting in a stop codon 15 bp after the NotI site. A +1 bp insertion restores the bla ORF so that b-lactamase protein is produced with a consequent gain of Ampicillin resistance.

The vector pMAL9.1 was constructed by cloning the lamB gene into the multiple cloning site of pEH1. Subsequently, a sequence was inserted in lamB after amino acid 154, containing the restriction sites FseI, SmaI and NotI. The reading frame for this insertion was chosen in a way that transfer of frame-selected DNA fragments excised by digestion with FseI and NotI from plasmids pMAL4.1 or pMAL4.31 to plasmid pMAL9.1 will yield a continuous reading frame of lamB and the respective insert.

The vector pHIE11 was constructed by cloning the fhuA gene into the multiple cloning site of pEH1. Thereafter, a sequence was inserted in fhuA after amino acid 405, containing the restriction site FseI, XbaI and NotI. The reading frame for this insertion was chosen in a way that transfer of frame-selected DNA fragments excised by digestion with FseI and NotI from plasmids pMAL4.1 or

pMAL4.31 to plasmid pHI11 will yield a continuous reading frame of fhuA and the respective insert.

Cloning and evaluation of the library for frame selection. Genomic *S. aureus* DNA fragments were ligated into the SmaI site of either the vector pMAL4.1 or pMAL4.31. Recombinant DNA was electroporated into DH10B electrocompetent *E. coli* cells (GIBCO BRL) and transformants plated on LB-agar supplemented with Kanamycin (50 µg/ml) and Ampicillin (50 µg/ml). Plates were incubated over night at 37°C and colonies collected for large scale DNA extraction. A representative plate was stored and saved for collecting colonies for colony PCR analysis and large-scale sequencing. A simple colony PCR assay was used to initially determine the rough fragment size distribution as well as insertion efficiency. From sequencing data the precise fragment size was evaluated, junction intactness at the insertion site as well as the frame selection accuracy (3n+1 rule).

Cloning and evaluation of the library for bacterial surface display. Genomic DNA fragments were excised from the pMAL4.1 or pMAL4.31 vector, containing the *S. aureus* library with the restriction enzymes FseI and NotI. The entire population of fragments was then transferred into plasmids pMAL9.1 (LamB) or pHI11 (FhuA) which have been digested with FseI and NotI. Using these two restriction enzymes, which recognise an 8 bp GC rich sequence, the reading frame that was selected in the pMAL4.1 or pMAL4.31 vector is maintained in each of the platform vectors. The plasmid library was then transformed into *E. coli* DH5a cells by electroporation. Cells were plated onto large LB-agar plates supplemented with 50 µg/ml Kanamycin and grown over night at 37°C at a density yielding clearly visible single colonies. Cells were then scraped off the surface of these plates, washed with fresh LB medium and stored in aliquots for library screening at -80°C.

Results

Libraries for frame selection. Two libraries (LSA50/6 and LSA250/1) were generated in the pMAL4.1 vector with sizes of approximately 50 and 250 bp, respectively. For both libraries a total number of clones after frame selection of $1-2 \times 10^6$ was

- 38 -

received using approximately 1 µg of pMAL4.1 plasmid DNA and 50 ng of fragmented genomic *S. aureus* DNA. To assess the randomness of the LSA50/6 library, 672 randomly chosen clones were sequenced. The bioinformatic analysis showed that of these clones none was present more than once. Furthermore, it was shown that 90% of the clones fell in the size range of 19 to 70 bp with an average size of 25 bp (Figure 2). All 672 sequences followed the 3n+1 rule, showing that all clones were properly frame selected.

Bacterial surface display libraries. The display of peptides on the surface of *E. coli* required the transfer of the inserts from the LSA50/6 library from the frame selection vector pMAL4.1 to the display plasmids pMAL9.1 (LamB) or pHIE11 (FhuA). Genomic DNA fragments were excised by FseI and NotI restriction and ligation of 5ng inserts with 0.1µg plasmid DNA resulted in 2-5x 10⁶ clones. The clones were scraped off the LB plates and frozen without further amplification.

Example 3: Identification of highly immunogenic peptide sequences from *S. aureus* using bacterial surface displayed genomic libraries and human serum

Experimental procedures

MACS screening. Approximately 2.5x 10⁸ cells from a given library were grown in 5 ml LB-medium supplemented with 50 µg/ml Kanamycin for 2 h at 37°C. Expression was induced by the addition of 1 mM IPTG for 30 min. Cells were washed twice with fresh LB medium and approximately 2x 10⁷ cells re-suspended in 100 µl LB medium and transferred to an Eppendorf tube.

10 µg of biotinylated, human serum was added to the cells and the suspension incubated over night at 4°C with gentle shaking. 900 µl of LB medium was added, the suspension mixed and subsequently centrifuged for 10 min at 6000 rpm at 4°C. Cells were washed once with 1 ml LB and then re-suspended in 100 µl LB medium. 10 µl of MACS microbeads coupled to streptavidin (Miltenyi Biotech, Germany) were added and the incubation continued for 20 min at 4°C. Thereafter 900 µl of LB medium was added and the MACS microbead cell suspension was loaded onto the equilibrated MS column (Mil-

- 39 -

tenyi Biotech, Germany) which was fixed to the magnet. (The MS columns were equilibrated by washing once with 1 ml 70% EtOH and twice with 2 ml LB medium.)

The column was then washed three times with 3 ml LB medium. The elution was performed by removing the magnet and washing with 2 ml LB medium. After washing the column with 3 ml LB medium, the 2 ml eluate was loaded a second time on the same column and the washing and elution process repeated. The loading, washing and elution process was performed a third time, resulting in a final eluate of 2 ml.

A second round of screening was performed as follows. The cells from the final eluate were collected by centrifugation and re-suspended in 1 ml LB medium supplemented with 50 µg/ml Kanamycin. The culture was incubated at 37°C for 90 min and then induced with 1 mM IPTG for 30 min. Cells were subsequently collected, washed once with 1 ml LB medium and suspended in 10 µl LB medium. Since the volume was reduced, 1 µg of human, biotinylated serum was added and the suspension incubated over night at 4°C with gentle shaking. All further steps were exactly the same as in the first selection round. Cells selected after two rounds of selection were plated onto LB-agar plates supplemented with 50 µg/ml Kanamycin and grown over night at 37°C.

Evaluation of selected clones by sequencing and Western blot analysis. Selected clones were grown over night at 37°C in 3 ml LB medium supplemented with 50 µg/ml Kanamycin to prepare plasmid DNA using standard procedures. Sequencing was performed at MWG (Germany) or in a collaboration with TIGR (U.S.A.).

For Western blot analysis approximately 10 to 20 µg of total cellular protein was separated by 10% SDS-PAGE and blotted onto HybondC membrane (Amersham Pharmacia Biotech, England). The LamB or FhuA fusion proteins were detected using human serum as the primary antibody at a dilution of 1:5000 and anti human IgG antibodies coupled to HRP at a dilution of 1:5000 as secondary antibodies. Detection was performed using the ECL detection kit (Amersham Pharmacia Biotech, England). Alternatively, rabbit anti FhuA or mouse anti LamB antibodies were used as primary antibodies in combination with the respective secondary antibodies cou-

pled to HRP for the detection of the fusion proteins.

Results

Screening of bacterial surface display libraries by magnetic activated cell sorting (MACS) using biotinylated human serum. The libraries LSA50/6 in pMAL9.1 and LSA250/1 in pHIE11 were screened with a pool of biotinylated, human patient sera (see Example 1) Preparation of antibodies from human serum). The selection procedure was performed as described under Experimental procedures. As a control, pooled human sera from infants that have most likely not been infected with *S. aureus* was used. Under the described conditions between 10 and 50 fold more cells with the patient compared to the infant serum were routinely selected (Figure 3). To evaluate the performance of the screen, approximately 100 selected clones were picked randomly and subjected to Western blot analysis with the same pooled patient serum. This analysis revealed that 30 to 50% of the selected clones showed reactivity with antibodies present in patient serum whereas the control strain expressing LamB or FhuA without a *S. aureus* specific insert did not react with the same serum. Colony PCR analysis showed that all selected clones contained an insert in the expected size range.

Subsequent sequencing of a larger number of randomly picked clones (500 to 800 per screen) led to the identification of the gene and the corresponding peptide or protein sequence that was specifically recognized by the human patient serum used for screening. The frequency with which a specific clone is selected reflects at least in part the abundance and/or affinity of the specific antibodies in the serum used for selection and recognizing the epitope presented by this clone. In that regard it is striking that some clones (ORF2264, ORF1951, ORF0222, lipase and IsaA) were picked up to 90 times, indicating their highly immunogenic property. All clones that are presented in Table 2 have been verified by Western blot analysis using whole cellular extracts from single clones to show the indicated reactivity with the pool of human serum used in the screen.

It is further worth noticing that most of the genes identified by the bacterial surface display screen encode proteins that are ei-

- 41 -

ther attached to the surface of *S. aureus* and/or are secreted. This is in accordance with the expected role of surface attached or secreted proteins in virulence of *S. aureus*.

Assessment of reactivity of highly immunogenic peptide sequences with different human sera. 10 to 30 different human patient sera were subsequently used to evaluate the presence of antibodies against the selected immunogenic peptide sequences that have been discovered in the screen according to the present invention. To eliminate possible cross-reactivity with proteins expressed by *E. coli*, all sera were pre-adsorbed with a total cellular lysate of *E. coli* DHa cells expressing PhuA protein.

This analysis is summarized in Table 2 and as an example shown in Figure 4 and is indicative of the validity of the present screen. It further shows that already short selected epitopes can give rise to the production of antibodies in a large number of patients (ORF1618, ORF1632, IsaA, Empbp, Protein A). Those peptide sequences that are not recognized by a larger set of patient sera may still be part of an highly immunogenic protein, but the recombinant protein itself may be tested for that purpose for each single case.

Example 4: Identification of highly immunogenic peptide sequences from genomic fragments from *S. aureus* using ribosome display and human serum

Experimental procedures

Ribosome display screening: 2.4 ng of the genomic library from *S. aureus* LSA250/1 in pMAL4.1 (described above) was PCR amplified with oligos ICC277 and ICC202 in order to be used for ribosome display.

Oligos	ICC277
(CGAATAATACGACTCACTATAGGGAGACCACAACGGTTTCCCACTAGTAATAATTTGTTTAAC	
TTTAAGAAGGAGATATATCCATGCAGaCCTTGGCCGGCCTCCC)	and ICC202
(GGCCACCCCGTGAAGGTGAGCCGGCGTAAGATGCTTTTCTGTGACTGG)	

hybridize 5' and 3' of the Fse I-Not I insertion site of plasmid pMAL4.1, respectively. ICC277 introduces a T7 phage RNA polymerase promoter, a palindromic sequence resulting in a stem-loop structure on the RNA level, a ribosome binding site (RBS) and the translation start of gene 10 of the T7 phage including the ATG start codon.

- 42 -

Oligo ICC202 hybridizes at nucleotide position 668 of the β -lactamase open reading frame and also introduces a stem-loop structure at the 3' end of the resulting RNA. PCR was performed with the High fidelity PCR kit (Roche Diagnostic) for 25 cycles at 50°C hybridization temperature and otherwise standard conditions.

The resulting PCR library was used in 5 consecutive rounds of selection and amplification by ribosome display similar as described previously (Hanes et al., 1997) but with modifications as described below.

One round of ribosome display contained the following steps: In vitro transcription of 2 μ g PCR product with the RiboMax kit (**Promega**) resulted in ca. 50 μ g A. In vitro translation was performed for 9 minutes at 37°C in 22 μ l volume with 4.4 μ l Premix Z (250 mM TRIS-acetate pH 7.5, 1.75 mM of each amino acid, 10 mM ATP, 2.5 mM GTP, 5 mM cAMP, 150 mM acetylphosphate, 2.5 mg/ml E. coli tRNA, 0.1 mg/ml folinic acid, 7.5 % PEG 8000, 200 mM potassium glutamate, 13.8 mM Mg(Ac)₂, 8 μ l S30 extract (x mg/ml) and about 2 μ g in vitro transcribed RNA from the pool. S30 extract was prepared as described (Chen et al, 1983). Next, the sample was transferred to an ice-cold tube containing 35.2 μ l 10 % milk-WBT (TRIS-acetate pH 7.5, 150 mM NaCl, 50 mM Mg(Ac)₂, 0.1 % Tween-20, 10 % milk powder) and 52.8 μ l WBTH (as before plus 2.5 mg/ml heparin). Subsequently, immuno precipitation was performed by addition of 10 μ g purified IgGs, incubation for 90 minutes on ice, followed by addition of 30 μ l MAGmol Protein G beads (Miltenyi Biotec, 90 minutes on ice). The sample was applied to a pre-equilibrated μ column (Miltenyi Biotec) and washed 5 times with ice-cold WBT buffer. Next 20 μ l EB20 elution buffer (50 mM TRIS-acetate, 150 mM NaCl, 20 mM EDTA, 50 μ g/ml *S. cerevisiae* RNA) was applied to the column, incubated for 5 minutes at 4°C. Elution was completed by adding 2 x 50 μ l EB20. The mRNA from the elution sample was purified with the High pure RNA isolation kit (Roche Diagnostics). Subsequent reverse transcription was performed with Superscript II reverse transcriptase kit (Roche Diagnostics) according to the instruction of the manufacturer with 60 pmol oligo ICC202 for 1 hour at 50°C in 50 μ l volume. 5 μ l of this mix was used for the following PCR reaction with primers ICC202 and ICC277 as described above.

- 43 -

Three rounds of ribosome display were performed and the resulting selected PCR pool subsequently cloned into plasmid pHIE11 (described above) by cleavage with restriction endonucleases NotI and FseI.

Evaluation of selected clones by sequencing and peptide-ELISA analysis: Selected clones were grown over night at 37°C in 3 ml LB medium supplemented with 50 µg/ml Kanamycin to prepare plasmid DNA using standard procedures. Sequencing was performed at MWG (Germany) or at the Institute of Genomic Research (TIGR; Rockville, MD, U.S.A.). Peptides corresponding to the inserts were synthesized and coated in 10 mM NaHCO₃ pH 9.3 at a concentration of 10 µg/ml (50 µl) onto 96-well microtiter plates (Nunc). After blocking with 1% BSA in PBS at 37°C, 1:200 and 1:1000 dilutions of the indicated sera were diluted in 1% BSA/PBS and applied to the wells. After washing with PBS/0.1 % Tween-20, biotin-labeled anti-human IgG secondary antibodies (SBA) were added and these were detected by subsequent adding horseradish-peroxidase-coupled streptavidin according to standard procedures.

Results

The 250-bp genomic library (LSA250/1) as described above was used for screening. Purified IgGs from uninfected adults but with high titer against *S. aureus* as described above were used for selection of antigenic peptides.

Three rounds of ribosome display selection and amplification were performed according to Experimental procedures; finished by cloning and sequencing the resulting PCR pool.

Sequence analyses of a large number of randomly picked clones (700) led to the identification of the gene and the corresponding peptide or protein sequence that was specifically recognized by the high titer serum used for screening. The frequency with which a specific clone was selected reflects at least in part the abundance and/or affinity of the specific antibodies in the serum used for selection and recognizing the epitope presented by this clone. Remarkably, some clones (ORFs) were picked up to 50 times, indicating their highly immunogenic property. Table 2 shows the ORF name, the Seq.ID No. and the number of times it was identi-

- 44 -

fied by the inventive screen.

For a number of immuno-selected ORFs peptides corresponding to the identified immunogenic region were synthesized and tested in peptide-ELISA for their reactivity towards the sera pool they were identified with and also a number of additional sera from patients who suffered from an infection by *S. aureus*. The two examples in the graphs in figure 5 show the values of peptides from aureolysin and Pls. They are not only hyperimmune reactive against the high titer sera pool but also towards a number of individual patient's sera. All synthesized peptides corresponding to selected immunogenic regions showed reactivity towards the high titer sera pool and Table 2 summarizes the number of times the peptides were reactive towards individual patients sera, similar as described above.

In addition, it is striking that for those ORFs that were also identified by bacterial surface display (described above), very often the actual immunogenic region within the ORF was identical or overlapping with the one identified by ribosome display. This comparison can be seen in Table 2.

Example 5: Identification of highly immunogenic antigens from *S. aureus* using Serological Proteome Analysis.

Experimental procedures

Surface protein preparations from *S. aureus* containing highly immunogenic antigens. *S. aureus* strains COL (Shafer and Iandolo, 1979) and agr- (Recsei et al., 1986) were stored as glycerol stocks at -80°C or on BHI (DIFCO) plates at 4°C. Single clones were used for inoculation of overnight cultures in either BHI ("standard conditions") or RPMI 1640 (GibcoBRL), last one depleted from iron ("stress conditions") by treating o/n with iminodiacetic acid (Sigma). Fresh medium was inoculated 1:100 the next day and bacteria were grown to O.D.₆₀₀ between 0.3 and 0.7. Bacteria were harvested by centrifugation and washed with ice-cold PBS. Surface proteins were prepared by lysostaphin treatment under isotonic conditions (Lim et al. 1998). Briefly; ~3x 10⁹ bacteria (according to O.D.₆₀₀ = 1 are about 5x10⁷ bacteria) were re-

suspended in 1 ml digestion buffer containing 35% raffinose (Aldrich Chemical Company), protease inhibitors (Roche) and 5 units lysostaphin (Sigma). After incubation at 37°C for 30 min, protoplasts were carefully sedimented by low-speed centrifugation. This treatment releases surface proteins covalently linked to the pentaglycine bridge of the peptidoglycan cell wall to the supernatant (in Crossley, 1997). Cell surface proteins were either precipitated with methanol/chloroform (Wessel, 1984) or concentrated in centrifugal filter-tubes (Millipore). Protein samples were frozen and stored at -80°C or dissolved in sample buffer and used for isoelectric focusing (IEF) immediately (Pasquali et al. 1997).

Serological proteome analysis of surface protein preparations from *S. aureus*. Samples were obtained from a) *S. aureus*/agr grown under "stress conditions", b) *S. aureus*/COL grown under "standard conditions" and c) *S. aureus*/COL "stress conditions". Loading onto 17 cm-strips containing immobilized pH gradients (pH 4-7, BioRad) was done using the "in-gel-reswelling procedure" (Pasquali et al., 1997). The gels for blotting were loaded with 100-800 µg protein, the preparative gels with 400-1,000 µg protein. Isoelectric focusing and SDS-PAGE (9-16% gradient gels) were performed as described (Pasquali et al., 1997). For Western blotting, proteins were transferred onto PVDF-membranes (BioRad) by semi-dry blotting. Transfer-efficiency was checked by amido-black staining. After blocking (PBS/0.1% Tween 20/10% dry milk, 4°C for 16 h), blots were incubated for two hours with serum (1:2,500-1:100,000 in blocking solution, see Table 3). After washing, specific binding of serum IgG was visualized with a goat-anti-human-IgG / peroxidase conjugate (1:25,000, Southern Biotech) as secondary antibody and development with a chemiluminescence substrate (ECLTM, Amersham). A representative result is shown in Figure 6. Membranes were stripped by treatment with 2% β-ME/Laemmli buffer for 30 min at 50-65°C, immediately re-probed with a different serum, and developed as described above. This procedure was repeated up to five times. Signals showing up with patient and/or healthy donor control sera but not with the infant pool, were matched to the Coomassie (BioRad) stained preparative gels (example shown in Figure 7). The results of these serological proteome analyses of surface protein preparations from *S. aureus* are summarized in Table 3.

Sequencing of protein spots by peptide-fingerprint MALDI-TOF-MS and tandem MS/MS. Gel pieces were washed alternately three times with 10 µl digestion buffer (10mM NH_4HCO_3 /CAN, 1:1). Afterwards the gel pieces were shrunken with 10 µl ACN and reswollen with 2 µl protease solution (0.05 µg/µl trypsin, Promega, Madison, USA). Digestion was performed for 10-12 h at 37°C. For MALDI-TOF-MS peptides were extracted from the gel pieces with 10 µl digestion buffer. The supernatant was concentrated with ZipTip™ (Millipore, Bedford, USA), the peptides were eluted onto the MALDI target with 0.5 µl extraction buffer (0.1% TFA/CAN, 1:1) and 0.5 µl matrix solution (HCCA in ACN/0.1% TFA, 1:1) was added. MALDI-TOF-MS was done using a REFLEX III (Bruker Daltonik, Bremen, Germany) equipped with a SCOUT384 ion source. The acceleration voltage was set to 25 kV, and the reflection voltage to 28.7 kV. The mass range was set from 700 Da to 4000 Da. Data acquisition was done on a SUN Ultra using XACQ software, version 4.0. Post-analysis data processing was done using XMASS software, version 4.02 (Bruker Daltonik, Bremen, Germany). The results are summarized in tables 3 and 4.

Example 6: Characterisation of highly immunogenic proteins from *S. aureus*

The antigens identified by the different screening methods with the IgG and IgA preparations from pre-selected sera are further characterized, by the following ways:

1. The proteins are purified, most preferably as recombinant proteins expressed in *E. coli* or in a Gram+ expression system or in an in vitro translation system, and evaluated for antigenicity by a series of human sera. The proteins are modified based on bioinformatic analysis: N-terminal sequences representing the signal peptide are removed, C-terminal regions downstream of the cell wall anchor are also removed, and extra amino acids as tags are introduced for the ease of purification (such as Strep-tagII, His-tag, etc.) A large number of sera is then used in ELISA assays to assess the fraction of human sera containing specific antibodies against the given protein (see Fig. 9 as an example). One of the selected antigens is a 895 aa long protein, what was called LPXTGV (see Tables 2 and 4), since it contains the Gram+ cell wall anchor sequence LPXTG. This signature has been shown to

serve as cleavage site for sortase, a trans-peptidase which covalently links LPXTG motif containing proteins to the peptidoglycan cell wall. LPXTGV is also equipped with a typical signal peptide (Fig. 8). ELISA data using this protein as a Strep-tagged recombinant protein demonstrate that this protein is highly immunogenic (high titers relative to other recombinant proteins) in a high percentage of sera (Fig. 9). Importantly, patients with acute *S. aureus* infection produce significantly more of these anti-LPXTGV antibodies, than healthy normals, suggesting that the protein is expressed during in vivo infection. The overall ELISA titers of the individual antigenic proteins are compared, and the ones inducing the highest antibody levels (highly immunogenic) in most individuals (protein is expressed by most strains in vivo) are favored. Since the antigen specificity and quality (class, subtype, functional, nonfunctional) of the antibodies against *S. aureus* produced in individual patients can vary depending on the site of infection, accompanying chronic diseases (e.g. diabetes) and chronic conditions (e.g. intravascular device), and the individuals' immune response, special attention was paid to the differences detected among the different patient groups, since medical records belonging to each sera were available. In addition, each patient serum is accompanied by the pathogenic strain isolated from the patient at the time of serum sampling.

2. Specific antibodies are purified for functional characterization. The purity and the integrity of the recombinant proteins are checked (e.g. detecting the N-terminal Strep-tag in Western blot analysis in comparison to silver staining in SDS-PAGE). The antigens are immobilized through the tags to create an affinity matrix, and used for the purification of specific antibodies from highly reactive sera. Using as an example strep-tagged LPXTGV as the capture antigen, 20 µg of antibody from 125 mg of IgG were purified. Based on the ELISA data a pure preparation was received, not having e.g. anti-LTA and anti-peptidoglycan (both dominant with unfractionated IgG) activity. The antibodies are then used to test cell surface localization by FACS and fluorescent microscopy (Fig. 10).

3. Gene occurrence in clinical isolates

An ideal vaccine antigen would be an antigen that is present in all, or the vast majority of, strains of the target organism to

- 48 -

which the vaccine is directed. In order to establish whether the genes encoding the identified *Staphylococcus aureus* antigens occur ubiquitously in *S. aureus* strains, PCR was performed on a series of independent *S. aureus* isolates with primers specific for the gene of interest. *S. aureus* isolates were obtained from patients with various *S. aureus* infections. In addition several nasal isolates from healthy carriers and several lab strains were also collected and analyzed. The strains were typed according to restriction fragment length polymorphism (RFLP) of the *spa* and *coa* genes (Goh et al. 1992, Frénay et al., 1994, vanden Bergh et al. 1999). From these results 30 different strains were identified - 24 patient isolates, 3 nasal isolates and 3 lab strains. To establish the gene distribution of selected antigens, the genomic DNA of these 30 strains was subjected to PCR with gene specific primers that flank the selected epitope (ORF1361: Seq.ID No. 187 and 188; ORF2268: Seq.ID No. 193 and 194; ORF1951: Seq.ID No. 195 and 196; ORF1632: Seq.ID No. 181 and 182; ORF0766: Seq.ID No. 183 and 184; ORF0576: Seq.ID No. 185 and 186; ORF0222: Seq.ID No. 189 and 190; ORF0360: Seq.ID No. 191 and 192). The PCR products were analyzed by gel electrophoresis to identify a product of the correct predicted size. ORFs 1361, 2268, 1951, 1632, 0766 and 0222 are present in 100% of strains tested and ORF0576 in 97%. However ORF0360 occurred in only 71% of the strains. Thus ORFs 1361, 2268, 1951, 1632, 0766, 0576 and 0222 each have the required ubiquitous presence among *S. aureus* isolates.

These antigens (or antigenic fragments thereof, especially the fragments identified) are especially preferred for use in a vaccination project against *S. aureus*.

4. Identification of highly promiscuous HLA-class II helper epitopes within the ORFs of selected antigens

The ORFs corresponding to the antigens identified on the basis of recognition by antibodies in human sera, most likely also contain linear T-cell epitopes. Especially the surprising finding in the course of the invention that even healthy uninfected, non-colonized individuals show extremely high antibody titers (> 100,000 for some antigens, see Example 5) which are stable for >1 year (see Example 1), suggests the existence of T-cell dependent memory most probably mediated by CD4+ helper-T-cells. The molecular

- 49 -

definition of the corresponding HLA class II helper-epitopes is usefull for the design of synthetic anti-staphylococcal vaccines, which can induce immunological memory. In this scenario the helper-epitopes derived from the staphylococcal antigens provide "cognate help" to the B-cell response against these antigens or fragments thereof. Moreover it is possible to use these helper-epitopes to induce memory to T-independent antigens like for instance carbohydrates (conjugate vaccines). On the other hand, intracellular occurring staphylococci can be eliminated by CD8+ cytotoxic T-cells, which recognize HLA class I restricted epitopes.

T-cell epitopes can be predicted by various public domain algorithms: http://bimas.dcrt.nih.gov/molbio/hla_bind/ (Parker et al. 1994), <http://134.2.96.221/scripts/MHCServer.dll/home.htm> (Rammensee et al. 1999), <http://mypage.ihost.com/usinet.hamme76/> (Sturniolo et al. 1999). The latter prediction algorithm offers the possibility to identify promiscuous helper-epitopes, i.e. peptides that bind to several HLA class II molecules. In order to identify highly promiscuous helper-epitopes within staphylococcal antigens the ORFs corresponding to Seq ID 64 (IsaA), Seq ID 114 (POV2), Seq ID 89 (ORF0222), Seq ID 70 (LPXTGIV), Seq ID 56 (LPXTGV), Seq ID 142 (LPXTGVI), Seq ID 81 (ORF3200), Seq ID 74 (ORF1951), Seq ID 94 (Empbp), Seq ID 83 (autolysin) and Seq ID 58 (ORF2498) were analyzed using the TEPITOPE package <http://mypage.ihost.com/usinet.hamme76/> (Sturniolo et al. 1999). The analysis was done for 25 prevalent DR-alleles and peptides were selected if they were predicted to be a) strong binders (1% threshold) for at least 10/25 alleles or b) intermediate (3% threshold) binders for at least 17/25 alleles.

The following peptides containing one or several promiscuous helper-epitopes were selected (and are claimed):

Seq ID 56:	pos. 6-40, 583-598, 620-646, 871-896
Seq ID 58:	no peptide fulfills selection criteria
Seq ID 64:	no peptide fulfills selection criteria
Seq ID 70:	pos. 24-53
Seq ID 74:	pos. 240-260
Seq ID 81:	pos. 1660-1682, 1746-1790
Seq ID 83:	pos. 1-29, 680-709, 878-902

- 50 -

Seq ID **89**: pos. 96-136
Seq ID **94**: pos. 1-29, 226-269, 275-326
Seq ID **114**: pos. 23-47, 107-156
Seq ID **142**: pos. 24-53

The corresponding peptides or fragments thereof (for instance overlapping 15-mers) can be synthesized and tested for their ability to bind to various HLA molecules in vitro. Their immunogenicity can be tested by assessing the peptide (antigen)-driven proliferation (BrdU or 3H-thymidine incorporation) or the secretion of cytokines (ELISPOT, intracellular cytokine staining) of T-cells in vitro (Mayer et al. 1996, Schmitt et al. 2000, Sester et al. 2000). In this regard it will be interesting to determine quantitative and qualitative differences in the T-cell response to the staphylococcal antigens or the selected promiscuous peptides or fragments thereof in populations of patients with different staphylococcal infections, or colonization versus healthy individuals neither recently infected nor colonized. Moreover, a correlation between the antibody titers and the quantity and quality of the T-cell response observed in these populations is expected. Alternatively, immunogenicity of the predicted peptides can be tested in HLA-transgenic mice (Sonderstrup et al. 1999).

Similar approaches can be taken for the identification of HLA class I restricted epitopes within staphylococcal antigens.

Synthetic peptides representing one or more promiscuous T helper epitopes from S.aureus

Partially overlapping peptides spanning the indicated regions of Seq ID **56** (LPXTGV), Seq ID **70** (LPXTGIV), Seq ID **74** (ORF1hom1), Seq ID **81** (EM_BP), Seq ID **83** (Autolysin), Seq ID **89** (ORF1hom2), Seq ID **94** (EMPBP), Seq ID **114** (POV2) and Seq ID **142** (LPXTGVI) were synthesized. Sequences of the individual peptides are given in Table 5. All peptides were synthesized using Fmoc chemistry, HPLC purified and analyzed by mass spectrometry. Lyophilized peptides were dissolved in DMSO and stored at -20°C at a concentration of 5-10 mM.

Binding of synthetic peptides representing promiscuous T helper

epitopes to HLA molecules in vitro

Binding of peptides to HLA molecules on the surface of antigen-presenting cells is a prerequisite for activation of T cells. Binding was assessed in vitro by two independent biochemical assays using recombinant soluble versions of HLA class II molecules. One assay measures the concentration dependent competitive replacement of a labeled reference peptide by the test peptides. The second assay is based on the formation of SDS-stable complexes upon binding of high- and intermediate affinity ligands. A summary of the results obtained by the two assays is given in Table 5.

Soluble HLA molecules (DRA1*0101/DRB1*0101 and DRA1*0101/DRB1*0401) were expressed in SC-2 cells and purified as described in Aichinger et al., 1997. For the competition assay (Hammer et al. 1995) HLA molecules were applied between 50 and 200 ng/well. For DRB1*0101 biotinilated indicator peptide HA (PKYVKQNTLKLAT, Valli et al. 1993) was used at 0.008 μ M. For DRB1*0401 biotinilated indicator peptide UD4 (YPKFVKQNTLKAA, Valli et al. 1993) was used between 0.03 and 0.06 μ M. Test peptides were used in serial dilutions from 0.02 nM to 200 μ M. Molecules, indicator and test peptides were incubated overnight at 37°C, pH 7. HLA:peptide complexes obtained after incubation with serial dilutions of test and reference peptides (the known high-affinity binders HA and UD4 were used as positive control) were captured in ELISA plates coated with antibody L243, which is known to recognize a conformational epitope formed only by correctly associated heterodimers. Incorporated biotin was measured by standard colorimetric detection using a streptavidin-alkaline phosphatase conjugate (Dako) with NBT/BCIP tablets (Sigma) as substrate and automated OD reading on a Victor reader (Wallac).

T cell response against promiscuous T helper epitopes assessed by IFNg ELISpot assay

Upon antigenic stimulation T cells start to proliferate and to secrete cytokines such as interferon gamma (IFNg). Human T cells specifically recognizing epitopes within S.aureus antigens were detected by IFNg-ELISpot (Schmitt et al. 2000). PBMCs from healthy individuals with a strong anti-S.aureus IgG response were isolated from 50-100 ml of venous blood by ficoll density gradi-

ent centrifugation and used after freezing and thawing. Cells were seeded at 200,000/well in 96-well plates. Peptides were added as mixtures corresponding to individual antigens, in both cases at 10 µg/ml each. Concanavalin A (Amersham) and PPD (tuberculin purified protein derivate, Statens Serum Institute) served as assay positive controls, assay medium without any peptide as negative control. After overnight incubation in Multi Screen 96-well filtration plates (Millipore) coated with the anti-human IFNγ monoclonal antibody B140 (Bender Med Systems) the ELISpot was developed using the biotinylated anti-human IFNγ monoclonal antibody B308-BT2 (Bender Med Systems), Streptavidin-alkaline phosphatase (DAKO) and BCIP/NBT alkaline phosphatase substrate (SIGMA). Spots were counted using an automatic plate reader (Bioreader 2000, BIO-SYS). Spots counted in wells with cells stimulated with assay medium only (negative control, generally below 10 spots / 100.000 cells) were regarded as background and subtracted from spot numbers counted in wells with peptides.

Table 5: Promiscuous T helper epitopes contained in S.aureus antigens

Amino acid sequences within S.aureus antigens containing highly promiscuous T helper epitopes	binding ¹⁾	IFNγ ELISpot ²⁾
Seq ID 56 (LPXTGV): pos. 6-40 p6-28 >PKLRSFYISIRKSTLGVASVIVST// p24-40 >VIVSTLFLISQHQQA//	+ -	44;80;8 ;95;112
Seq ID 56 (LPXTGV): pos. 620-646 p620-646 >FPYIPDKAVYNAIVKVVVANIGYEQ//	+	
Seq ID 56 (LPXTGV): pos. 871-896 p871-896 >QSWWGLYALLGMLALFIPKFRKESK//	-	
Seq ID 70 (LPXTGIV): pos. 24-53 p24-53 >YSIRKFTVGTASILIGSLMYLGTQQEAEA//	nd	34;14;0 ;57;16
Seq ID 74 (ORF1hom1): pos. 240-260 p240-260 >MNYGYGPGVVTSRTISASQA//	+	47;50;0 ;85;92

Seq ID 81 (EM_BP): pos. 1660-1682 p1660-1682 >NEIVLETIRDINNAHTLQQVEA//	nd	2;14;5; 77;26
Seq ID 81 (EM_BP): pos. 1746-1790 p1746-1773 >LHMRHFSNNFGNVIKNAIGVVGISGLLA// p1753-1779 >NNFGNVIKNAIGVVGISGLLASFWFFI// p1777-1789 >FFIAKRRRKEDEE/	nd nd nd	
Seq ID 83 (Autolysin) pos. 1-29 p1-29: >MAKKFNYKLPSMVALTLVGSAVTAHQVQA//	nd	6;35;7; 60;49
Seq ID 83 (Autolysin) pos. 878-902 p878-902: >NGLSMVPWGTKNQVILTGNNIAQG/	nd	
Seq ID 89 (ORF1hom2): pos. 96-136 p96-121 >GESLNIIASRYGVSVDQLMAANNLRG// p117-136 >NNLRGYLIMPNTLQIPNG//	- -	0;35;0; 29;104
Seq ID 94 (EMPBP): pos. 1-29 p4-29: >KLLVLTMTSLFATQIMNSNHAKASV//	+	
Seq ID 94 (EMPBP): pos. 226-269 p226-251 >IKINHFCVVPQINSFKVIPPYGHNS// p254-270 >MHVPSFQNNTTATHQN//	- +	26;28;1 6;43;97
Seq ID 94 (EMPBP): pos. 275-326 p275-299 >YDYKYFYSYKVVGKVKKYFSFSQS// p284-305 >YKVVGKVKKYFSFSQSNGYKIG// p306-326 >PSLNIKNVNYQYAVPSYSPT//	+ + +	
Seq ID 114 (POV2): pos. 23-47 p23-47 >AGGIFYNQTNQQLLVLC DGMGGHK//	-	49;20;4 ;77;25
Seq ID 114 (POV2): pos. 107-156 p107-124 >ALVFEKSVVIANVGDSRA/ p126-146 >RAYVINSRQIEQITSDHSFVN// p142-158 >SFVNHLVLTGQITPEE//	- nd nd	
Seq ID 142 (LPXTGVI): pos. 1-42 p6-30 >KEFKSFYSIRKSSSLGVASVAISTL// p18-42 >SSLGVASVAISTLLLLMSNGEAQA//	++ nd	0;41;20 ;88;109
Seq ID 142 (LPXTGVI): pos. 209-244 p209-233 >IKLVSYDTVKDYAYIRFSVSNGTKA// p218-244 >KDYAYIRFSVSNGTAKVKIVSSTHFNN//	+ +	
Seq ID 142 (LPXTGVI): pos. 395-428 p395-418 >FMVEGQVRTISTYAINNTRCTIF// p416-428 >TIFRYVEGKSLYE//	- -	

- 54 -

Seq ID 142 (LPXTGVI): pos. 623-647		
p623-647 >MTLPLMALLALSSIVAFVLPRKRKN //	-	

¹⁾ binding to soluble DRA1*0101/DRB1*0401 molecules was determined using a competition assay (+, ++: binding, -: no competition up to 200 µM test peptide; nd: not done)

²⁾ results from 5 healthy individuals with strong anti-S.aureus IgG response. Data are represented as spots/200.000 cells (background values are subtracted)

5. Antigens may be injected into mice - and the antibodies against these proteins can be measured.

6. Protective capacity of the antibodies induced by the antigens through vaccination can be assessed in animal models.

Both 5. and 6. are methods well available to the skilled man in the art.

Example 7: Applications

A) An effective vaccine offers great potential for patients facing elective surgery in general, and those receiving endovascular devices, in particular. Patients suffering from chronic diseases with decreased immune responses or undergoing continuous ambulatory peritoneal dialysis are likely to benefit from a vaccine with S. aureus by immunogenic serum-reactive antigens according to the present invention. Identification of the relevant antigens will help to generate effective passive immunization (humanized monoclonal antibody therapy), which can replace human immunoglobulin administration with all its dangerous side-effects. Therefore an effective vaccine offers great potential for patients facing elective surgery in general, and those receiving endovascular devices, in particular.

S. aureus can cause many different diseases.

1. Sepsis, bacteraemia
2. Haemodialysed patients - bacteriemia, sepsis
3. Peritoneal dialyses patients - peritonitis
4. Patients with endovascular devices (heart surgery, etc) - endocarditis, bacteriemia, sepsis

5. Orthopedic patients with prosthetic devices - septic arthritis
6. Preventive vaccination of general population

B) Passive and active vaccination, both with special attention to T-cells with the latter one: It is an aim to induce a strong T helper response during vaccination to achieve efficient humoral response and also immunological memory. Up till now, there is no direct evidence that T-cells play an important role in clearing *S. aureus* infections, however, it was not adequately addressed, so far. An effective humoral response against proteinaceous antigens must involve T help, and is essential for developing memory. Naïve CD4+ cells can be differentiated into Th1 or Th2 cells. Since, innate immunological responses (cytokines) will influence this decision, the involvement of T-cells might be different during an acute, serious infection relative to immunization of healthy individuals with subunit vaccines, not containing components which impair the immune response during the natural course of the infection. The consequences of inducing Th1 or Th2 responses are profound. Th1 cells lead to cell-mediated immunity, whereas Th2 cells provide humoral immunity.

C) Preventive and therapeutic vaccines

Preventive: active vaccination/passive immunization of people in high risk groups, before infection

Therapeutic: passive vaccination of the already sick.

Active vaccination to remove nasal carriage

Specific example for an application

Elimination of MRSA carriage and prevention of colonization of the medical staff

Carriage rates of *S. aureus* in the nares of people outside of the hospitals varies from 10 to 40%. Hospital patients and personnel have higher carriage rates. The rates are especially high in patients undergoing hemodialysis and in diabetics, drug addicts and patients with a variety of dermatologic conditions. Patients at highest risk for MRSA infection are those in large tertiary-care hospitals, particularly the elderly and immunocompromised, those

in intensive care units, burn patients, those with surgical wounds, and patients with intravenous catheters.

The ELISA data strongly suggest that there is a pronounced IgA response to *S. aureus*, which is not obvious or known from the literature. Since the predominant mucosal immune response is the production of IgA with neutralizing activity, it is clear that the staphylococcal epitopes and antigens identified with the highly pure IgA preparations lead to an efficient mucosal vaccine.

- Clear indication: Everybody's threat in the departments where they perform operation (esp. orthopedics, traumatology, gen. surgery)
- Well-defined population for vaccination (doctors and nurses)
- Health care workers identified as intranasal carriers of an epidemic strain of *S. aureus* are currently treated with mupirocin and rifampicin until they eliminate the bacteria. Sometimes it is not effective, and takes time.
- Available animal model: There are mice models for intranasal carriage.

Sera ID#	BHI lysate	LTA	PG	CfA	D1+D3	FnBPA	sdrE	sdrC	EBP	enolase	LP309	LP342	coagul	Fib	SrTA	CfB	Map-w
22																	<input type="checkbox"/>
23	4,5,6...			5.....	3.....	6.....	2.....	7.....	4.....	6,7.....	7.....		6,7.....		2.....	2.....	
24							4.....		6.....								8,9.....
25			5.....	<input type="checkbox"/>					<input type="checkbox"/>								
26	8.....													7.....			
27	<input type="checkbox"/>			<input type="checkbox"/>				8.....			4.....	4,5.....	4,5.....		5.....		
28				<input type="checkbox"/>													
29										1.....			<input type="checkbox"/>				
30																	
31					1.....	1.....							1.....				
32			4.....								<input type="checkbox"/>						
33			8.....	4.....		4.....		5.....		<input type="checkbox"/>							
34					7,8.....			<input type="checkbox"/>		2.....	2.....	1.....	6,7.....	5.....	1.....		
35	4,5,6...	8.....	2,3.....						5.....		1*****					3.....	4.....
36	3.....																
37				7.....	7,8.....								3.....				
38				8.....				<input type="checkbox"/>		3,4.....						<input type="checkbox"/>	
39																	
40		7.....	6,7.....			3.....				<input type="checkbox"/>		4,5.....				8,9.....	

Table I. ELISA titers of sera from non-infected individuals against multiple staphylococcal proteins.

Anti-staphylococcal antibody levels were measured individually by standard ELISA with total lysate prepared from *S. aureus* grown in BHI medium (BHI), lipoteichoic acid (LTA), peptidoglycan (PG), 13 recombinant proteins, representing cell surface and secreted proteins, such as clumping factor A and B (ClfA, ClfB), Fibronectin-binding protein (FnBPA), SD-repeat proteins (sdrC, sdrE), MHC Class II analogous protein (map-w), Elastin-binding protein (EBP), enolase (reported to be cell surface located and immunogenic), iron transport lipoproteins (LP309, LP342), sortase (srtA), coagulase (coa), extracellular fibrinogen-binding protein (fib). Two short synthetic peptides representing 2 of the five immunodominant D repeat domains from FnBPA was also included (D1+D3) as antigens. The individual sera were ranked based on the IgG titer, and obtained a score from 1-9. Score 1 labels the highest titer serum and score 8 or 9 labels the sera which were 8th or 9th among all the sera tested for the given antigen. It resulted in the analyses of the top 20 percentile of sera (8-9/40). The five "best sera" meaning the most hyper reactive in terms of anti-staphylococcal antibodies were selected based on the number of scores 1-8. **** means that the antibody reactivity against the particular antigen was exceptionally high (>2x ELISA units relative to the 2nd most reactive serum).

Table 2a: Immunogenic proteins identified by bacterial surface and ribosome display: *S. aureus*

Bacterial surface display: A, LSA250/1 library in fhuA with patient sera 1 (655); B, LSA50/6 library in lamB with patient sera 1 (484); C, LSA250/1 library in fhuA with IC sera 1 (571); E, LSA50/6 library in lamB with IC sera 2 (454); F, LSA50/6 library in lamB with patient sera P1 (1105); G, LSA50/6 library in lamB with IC sera 1 (471)); H, LSA250/1 library in fhuA with patient sera 1 (IgA, 708). Ribosome display: D, LSA250/1 library with IC sera (1686). *, identified 18 times of 33 screened; was therefore eliminated from screen C. **, prediction of antigenic sequences longer than 5 amino acids was performed with the programme ANTI-GENIC (Kolaskar and Tongaonkar, 1990); #, identical sequence present twice in ORF; ##, clone not in database (not sequence by

TIGR) .

S. <i>aureus</i> antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant re- gion (positive/total)	Seq ID no: (DNA +Prot)
SaA0003	ORF2963P	repC	5-20, 37-44, 52-59, 87-94, 116-132	C:3	aa 112-189	C:GSBYM94(112-189):26/30	171, 172
SaA0003	ORF2967P	repC	7-19, 46-57, 85-91, 110-117, 125-133, 140-149, 156-163, 198-204, 236-251, 269-275, 283-290, 318-323, 347-363	C:18	aa 9-42 aa 158-174	C:GSBY153(9-42):1/1	150, 158
0093	ORF1879	SdrC	23-51, 75-80, 90-99, 101-107, 151-157, 173-180, 186-205, 215-226, 239-263, 269-274, 284-304, 317-323, 329-336, 340-347, 360-366, 372-379, 391-397, 399-406, 413-425, 430-436, 444-455, 499-505, 520-529, 553-568, 586-592, 600-617, 631-639, 664-678, 695-701, 891-903, 906-912, 926-940	A:1, D:5, C:1, F:6, G:2	aa 98-182 aa 684-764 aa 836-870	A:GSBXL70(98-182):9/30 D:n.d. C:GSBYH73(815-870):3/16	34, 86
0095	ORF1881	SdrE	25-45, 72-77, 147-155, 198-211, 217-223, 232-238, 246-261, 266-278, 281-294, 299-304, 332-340, 353-360, 367-380, 384-396, 404-409, 418-429, 434-440, 448-460, 465-476, 493-509, 517-523, 531-540, 543-555, 561-566, 576-582, 584-591, 603-617, 633-643, 647-652, 668-674, 677-683, 696-704, 716-728, 744-752, 755-761, 789-796, 809-815, 826-840, 854-862, 887-903, 918-924, 1110-1116, 1125-1131, 1145-1159	C:12, E:2	aa 147-192	C:GSBYH31(147-192):2/14 E:GSBZA27(144-162):23/41	145, 153
0123	ORF1909	unknown	9-28, 43-48, 56-75, 109-126, 128-141, 143-162, 164-195, 197-216, 234-242, 244-251	B:3, E:7, G:1	aa 168-181	B:GSBXF80(168-181):5/27 E:GSBZC17(168-181):25/41	35, 87
0160	ORF1941	unknown	4-10, 20-42, 50-86, 88-98, 102-171, 176-182, 189-221, 223-244, 246-268, 276-284, 296-329	A:1	aa 112-188	A:GSBXO07(112-188):5/30	36, 88
0222	ORF1988	homology with ORF1	4-9, 13-24, 26-34, 37-43, 45-51, 59-73, 90-96, 99-113, 160-173, 178-184, 218-228, 233-238, 255-262	A:52, C:18*, H:19	aa 45-105 aa 103-166 aa 66-153	A:GSBXM63(65-95):1/1 A:GSBXM82(103-166):14/29 A:GSBXX44-bmd3(65-153):47/51	37, 89
0308	ORF2077	Complement, un- known	13-27, 42-63, 107-191, 198-215, 218-225, 233-250	A:6, B:2, C:47, E:35	complement bp 474-367	A:GSBXX03(bp473-367):28/69 B:GSBXD29(bp465-431):10/27	38, 90


- 61 -

S. aureus antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
0317	ORF2088	preprotein translocase secA subunit	16-29, 64-77, 87-93, 95-101, 127-143, 150-161, 204-221, 225-230, 236-249, 263-269, 281-309, 311-325, 337-343, 411-418, 421-432, 435-448, 461-467, 474-480, 483-489, 508-516, 542-550, 580-589, 602-611, 630-636, 658-672, 688-705, 717-723, 738-746, 775-786, 800-805, 812-821, 828-834	A:1	aa 1-19	A:GSBXP37(1-19):6/29	39, 91
0337	ORF2110	Hypothetical protein	26-53, 95-123, 164-176, 189-199	D:12	aa 8-48	D:n.d.	40, 92
0358	ORF2132	Clumping factor A	8-35, 41-48, 59-66, 87-93, 139-144, 156-163, 198-209, 215-229, 236-244, 246-273, 276-283, 285-326, 328-342, 349-355, 362-370, 372-384, 396-402, 405-415, 423-428, 432-452, 458-465, 471-477, 484-494, 502-515, 540-547, 554-559, 869-875, 893-898, 907-924	C:1, D:2, E:1	aa 706-809	D:n.d.	41, 93
0360	ORF2135 Empbp	extracellular matrix and plasma binding protein	7-13, 15-23, 26-33, 68-81, 84-90, 106-117, 129-137, 140-159, 165-172, 177-230, 234-240, 258-278, 295-319	A:46, B:21, C:11, E:2, F:18, G:7, H:12	aa 22-56 aa 23-99 aa 97-115 aa 233-250 aa 245-265	A:GSBXXK24(23-55):1/1 B:GSBXXB43(39-54):58/71 A:GSBXXK02-bmd1(22-99):59/59 B:GSBXXD82-bdb19(97-115):1/1 F:SALAL03(233-250):15/41	42, 94
0453	ORF2227	comA operon protein 2	17-25, 27-55, 84-90, 95-101, 115-121	C:3	aa 55-101	C:GSBYG07(55-101):1/1	146, 154
0569	ORF1640	V8 protease	5-32, 66-72, 87-98, 104-112, 116-124, 128-137, 162-168, 174-183, 248-254, 261-266, 289-303, 312-331	A:1, F:1	aa 174-249	A:GSBXS51(174-249):11/30	32, 84

S. aureus antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
0576	ORF1633 Autolysin	autolysin, adhesion	4-19, 57-70, 79-88, 126-132, 144-159, 161-167, 180-198, 200-212, 233-240, 248-255, 276-286, 298-304, 309-323, 332-346, 357-366, 374-391, 394-406, 450-456, 466-473, 479-487, 498-505, 507-519, 521-530, 532-540, 555-565, 571-581, 600-611, 619-625, 634-642, 650-656, 658-665, 676-682, 690-699, 724-733, 740-771, 774-784, 791-797, 808-815, 821-828, 832-838, 876-881, 893-906, 922-929, 938-943, 948-953, 969-976, 1002-1008, 1015-1035, 1056-1069, 1105-1116, 1124-1135, 1144-1151, 1173-1181, 1186-1191, 1206-1215, 1225-1230, 1235-1242	A:21, B:46, C:55, E:5, F:85, H:19	aa 6-66 aa 65-124 aa 579-592 aa 590-604	A:GSBXN93(6-66):5/16 C:GSBYH05(45-144):7/8 A:GSBXX66-bmd18(65-124):16/30 B:GSBXXB89(108-123):1/1 B:GSBXXB02(590-603):39/71 F:SALAM15(579-592):25/41	31, 83
0657	ORF unknown	LPXTGVI protein	9-33, 56-62, 75-84, 99-105, 122-127, 163-180, 186-192, 206-228, 233-240, 254-262, 275-283, 289-296, 322-330, 348-355, 416-424, 426-438, 441-452, 484-491, 541-549, 563-569, 578-584, 624-641	A:2, B:27, F:15	aa 527-544	B:GSBXE07-bdb1(527-542):11/71 F:SALAX70(526-544):11/41	1, 142
0749	ORF1462	Carbamoyl-phosphate synthase	8-23, 31-38, 42-49, 61-77, 83-90, 99-108, 110-119, 140-147, 149-155, 159-171, 180-185, 189-209, 228-234, 245-262, 264-275, 280-302, 304-330, 343-360, 391-409, 432-437, 454-463, 467-474, 478-485, 515-528, 532-539, 553-567, 569-581, 586-592, 605-612, 627-635, 639-656, 671-682, 700-714, 731-747, 754-770, 775-791, 797-834, 838-848, 872-891, 927-933, 935-942, 948-968, 976-986, 1000-1007, 1029-1037	C:2	aa 630-700	C:GSBYK17(630-700):5/9	144, 152
944	ORF1414	Yfix	6-33, 40-46, 51-59, 61-77, 84-104, 112-118, 124-187, 194-248, 252-296, 308-325, 327-361, 367-393, 396-437, 452-479, 484-520, 535-545, 558-574, 582-614, 627-633, 656-663, 671-678, 698-704, 713-722, 725-742, 744-755, 770-784, 786-800, 816-822, 827-837	D:4	aa 483-511	D:n.d.	30, 82
1050	ORF1307	unknown	49-72, 76-83, 95-105, 135-146, 148-164, 183-205	A:1, H:45	aa 57-128	A:GSBXM26(57-128):7/30	28, 80

S. aureus antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
1209	ORF3006	hemN homolog	12-36, 43-50, 58-65, 73-78, 80-87, 108-139, 147-153, 159-172, 190-203, 211-216, 224-232, 234-246, 256-261, 273-279, 286-293, 299-306, 340-346, 354-366	B:7, F:8	aa 167-181	B:GSBXB76(167-179):25/71 F:SALBC54(169-183):18/41	54, 106
1344	ORF0212	NifS protein homolog	8-16, 22-35, 49-58, 70-77, 101-121, 123-132, 147-161, 163-192, 203-209, 216-234, 238-249, 268-274, 280-293, 298-318, 328-333, 339-345, 355-361, 372-381	A:11	aa 34-94	A:GSBXX59-bmd21(34-94):6/29	5, 141
1356	ORF0197	Hypothetical protease	28-55, 82-100, 105-111, 125-131, 137-143	D:12	aa 1-49	D:n.d.	4, 57
1361	ORF0190	LPXTGV protein	5-39, 111-117, 125-132, 134-141, 167-191, 196-202, 214-232, 236-241, 244-249, 292-297, 319-328, 336-341, 365-380, 385-391, 407-416, 420-429, 435-441, 452-461, 477-488, 491-498, 518-532, 545-556, 569-576, 581-587, 595-602, 604-609, 617-640, 643-651, 702-715, 723-731, 786-793, 805-811, 826-839, 874-889	A:1, B:23, E:3, F:31	aa 37-49 aa 63-77 aa 274-334	B:GSBXF81(37-49):1/1 B:GSBXXD45-bdb4(62-77):12/70 A:GSBXL77(274-334):5/30 F:SALAP81(62-77):10/41	3, 56
1371	ORF0175	YtpT, conserved hypothetical protein	37-42, 57-62, 121-135, 139-145, 183-190, 204-212, 220-227, 242-248, 278-288, 295-30, 304-309, 335-341, 396-404, 412-433, 443-449, 497-503, 505-513, 539-545, 552-558, 601-617, 629-649, 702-711, 736-745, 793-804, 814-829, 843-858, 864-885, 889-895, 905-913, 919-929, 937-943, 957-965, 970-986, 990-1030, 1038-1049, 1063-1072, 1080-1091, 1093-1116, 1126-1136, 1145-1157, 1163-1171, 1177-1183, 1189-1196, 1211-1218, 1225-1235, 1242-1256, 1261-1269	C:3, E:2, G:1	aa 624-684 aa 891-905	C:GSBYG95(624-684):7/22 E:GSBZB45(891-905):10/41	143, 151
1491	ORF0053	Cmp binding factor I homolog	12-29, 34-40, 63-71, 101-110, 114-122, 130-138, 140-195, 197-209, 215-229, 239-253, 255-274	A:7, C:2, E:7, F:4	aa 39-94	A:GSBXM13(39-94):10/29 F:SALAY30(39-53):4/41	2, 55
1616	ORF1180	leukocidin F homolog	16-24, 32-39, 43-49, 64-71, 93-99, 126-141, 144-156, 210-218, 226-233, 265-273, 276-284	A:10	aa 158-220	A:GSBXXK06(158-220):8/29	27, 79
1618	ORF1178	LukM homolog	5-24, 88-94, 102-113, 132-143, 163-173, 216-224, 254-269, 273-278, 305-313, 321-327, 334-341	A:13, B:3, C:36, E:4, F:12, G:2, H:10	aa 31-61 aa 58-74	A:GSBXXK60(31-61):20/29 B:GSBXXB48(58-74):49/71 F:SALAY41(58-74):30/41	26, 78

S. <i>aureus</i> antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant re- gion (positive/total)	Seq ID no: (DNA +Prot)
1632	ORF1163	SdrH homolog	7-35, 54-59, 247-261, 263-272, 302-320, 330-339, 368-374, 382- 411	B:6, E:11, F:34	aa 105-119 aa 126-143 aa 168-186	B:GSBXG53(168- 186):39/71 F:SALAP07(105- 119):11/41	25, 77
1763	ORF1024	unknown	5-32, 35-48, 55-76	C:3	complement bp 237-170	C:GSBYI30(98aa):1 /1	24, 76
1845	ORF0942	Hyaluronate lyase	10-26, 31-44, 60-66, 99-104, 146- 153, 163-169, 197-205, 216-223, 226-238, 241-258, 271-280, 295- 315, 346-351, 371-385, 396-407, 440-446, 452-457, 460-466, 492- 510, 537-543, 546-551, 565-582, 590-595, 635-650, 672-678, 686- 701, 705-712, 714-721, 725-731, 762-768, 800-805	D:5, F:2	aa208-224 aa 672-727	D:n.d.	23, 75
1951	ORF0831	homology with ORF1	5-22, 42-50, 74-81, 139-145, 167- 178, 220-230, 246-253, 255-264	A:223, B:56, C:167, E:43, F:100, G:13, H:102	aa 137-237 aa 250-267	B:GSBXC07(180- 190):1/1 A:GSBXC29(177- 195):15/29 B:GSBXC43(250- 267):10/71 F:SALAM13(178- 191):20/41	22, 74
1955	ORF0826	homology with ORF1	4-9, 15-26, 65-76, 108-115, 119- 128, 144-153	A:1, B:3, E:1, F:8	aa 38-52 aa 66-114	A:GSBXR10(66- 114):5/30 F:SALAM67(37- 52):16/41	21, 73
2031	ORF0749	unknown	10-26, 31-43, 46-58, 61-66, 69-79, 85-92, 100-115, 120-126, 128-135, 149-155, 167-173, 178-187, 189- 196, 202-222, 225-231, 233-240, 245-251, 257-263, 271-292, 314- 322, 325-334, 339-345	B:2, F:2	aa 59-74	B:GSBXC01(59- 71):11/26	20, 72
2086	ORF0691 Sbi	IgG binding protein	6-20, 53-63, 83-90, 135-146, 195- 208, 244-259, 263-314, 319-327, 337-349, 353-362, 365-374, 380- 390, 397-405, 407-415	A:1, B:8, E:24, F:9, G:137	aa 208-287 aa 261-276 aa 286-314	A:GSBXS55(208- 287):38/46 B:GSBXC34(299- 314):11/71 F:SALAX32(261- 276):21/41	19, 71

S. <i>aureus</i> antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant re- gion (positive/total)	Seq ID no: (DNA +Prot)
2180	ORF0594	LPXTGIV protein	11-20, 26-47, 69-75, 84-92, 102-109, 119-136, 139-147, 160-170, 178-185, 190-196, 208-215, 225-233, 245-250, 265-272, 277-284, 300-306, 346-357, 373-379, 384-390, 429-435, 471-481, 502-507, 536-561, 663-688, 791-816, 905-910, 919-933, 977-985, 1001-1010, 1052-1057, 1070-1077, 1082-1087, 1094-1112	A:3, C:3, E:6, F:2, H: 6 	aa 493-587 aa 633-715 aa 704-760* aa 760-832 (aa 832-887)*	A:GSBXS61(493-555):1/1 A:GSBXL64(496-585):1/1 A:GSBXS92(760-841):1/1 A:bmd4(704-760):16/30* (A:bmd4(830-885):16/30)* F:SALBC43(519-533):4/41	18, 70
2184	ORF0590	FnbpB	5-12, 18-37, 104-124, 139-145, 154-166, 175-181, 185-190, 193-199, 203-209, 235-244, 268-274, 278-292, 299-307, 309-320, 356-364, 375-384, 390-404, 430-440, 450-461, 488-495, 505-511, 527-535, 551-556, 567-573, 587-593, 599-609, 624-631, 651-656, 665-671, 714-726, 754-766, 799-804, 818-825, 827-833, 841-847, 855-861, 876-893, 895-903, 927-940	A:2, C:4, G:9	aa 701-777 aa 783-822	A:GSBXM62(702-777):28/28 A:GSBXR22(783-855):1/1	17, 69
2186	ORF0588	Fnbp	8-29, 96-105, 114-121, 123-129, 141-147, 151-165, 171-183, 198-206, 222-232, 253-265, 267-277, 294-300, 302-312, 332-338, 362-368, 377-383, 396-402, 410-416, 451-459, 473-489, 497-503, 537-543, 549-559, 581-600, 623-629, 643-649, 655-666, 680-687, 694-700, 707-712, 721-727, 770-782, 810-822, 874-881, 883-889, 897-903, 911-917, 925-931, 933-939, 946-963, 965-973, 997-1010	A:4, C:4, D:5, E:2	aa 710-787 aa 855-975 aa 916-983	C:GSBYN05(710-787):19/25 D:n.d. A:GSBXP01(916-983):17/30	16, 68
2224	ORF0551	unknown	49-56, 62-68, 83-89, 92-98, 109-115, 124-131, 142-159, 161-167, 169-175, 177-188, 196-224, 230-243, 246-252	B:2	aa 34-46	B:GSBXD89(34-46):1/1	15, 67

<i>S. aureus</i> antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant re- gion (positive/total)	Seq ID no: (DNA +Prot)
2254	ORF0519	Conserved hypo- thetical protein	14-22, 32-40, 52-58, 61-77, 81-93, 111-117, 124-138, 151-190, 193- 214, 224-244, 253-277, 287-295, 307-324, 326-332, 348-355, 357- 362, 384-394, 397-434, 437-460, 489-496, 503-510, 516-522, 528- 539, 541-547, 552-558, 563-573, 589-595, 602-624, 626-632, 651- 667, 673-689, 694-706, 712-739, 756-790	D:3	aa 403-462	D.n.d.	14, 66
2264	ORF0509	ORF1; homology with putative se- creted antigen precursor from <i>S. epidermidis</i>	5-31, 47-55, 99-104, 133-139, 156- 172, 214-224, 240-247	A:131, B:51, C:13, E:43, F:78, G:2, H:17	aa 7-87 aa 133-242	A:GSBXP22(145- 196):1/1 A:GSBXXK05- bmd16(178- 218):6/29 B:GSBXE24- bdb20(167-178):1/1 F:SALAQ91(173- 184):15/41	13, 65
2268	ORF0503	IsaA, possibly ad- hesion/ aggrega- tion	7-19, 26-45, 60-68, 94-100, 111- 119, 126-137, 143-148, 169-181, 217-228	A:7, B:65, C:3, E:2, F:53	aa 67-116 aa 98-184 aa 182-225	A:GSBXXK88(67- 116):1/1 A:GSBXN19(98- 184):22/29 A:GSBXN32(182- 225):34/71 B:GSBXB71(196- 209):16/29 F:SALAL22(196- 210):16/41	12, 64
2344	ORF0426	Clumping factor B	4-10, 17-45, 120-127, 135-141, 168-180, 187-208, 216-224, 244- 254, 256-264, 290-312, 322-330, 356-366, 374-384, 391-414, 421- 428, 430-437, 442-449, 455-461, 464-479, 483-492, 501-512, 548- 555, 862-868, 871-876, 891-904	D:9, E:1, F:3, H: 4	aa 706-762 aa 810-852	D.n.d.	11, 63
2351	ORF0418	aureolysin	10-29, 46-56, 63-74, 83-105, 107- 114, 138-145, 170-184, 186-193, 216-221, 242-248, 277-289, 303- 311, 346-360, 379-389, 422-428, 446-453, 459-469, 479-489, 496- 501	A:1, C: 6	aa 83-156	A:GSBXO46(83- 156):14/29	10, 62

<i>S. aureus</i> antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant re- glon (positive/total)	Seq ID no: (DNA +Prot)
2359	ORF0409	ISSP, immuno- genic secreted protein precursor, putative	4-29, 92-99, 119-130, 228-236, 264-269, 271-280, 311-317, 321- 331, 341-353, 357-363, 366-372, 377-384, 390-396, 409-415, 440- 448, 458-470, 504-520, 544-563, 568-581, 584-592, 594-603, 610- 616	B:4, F:11	aa 168-184 aa 206-220 aa 297-309	B:GSB XD01(168- 184):1/1 B:GSB XD62(205- 220):1/1 B:GSBXC17(297- 309):6/27 F:SALAL04(205- 220):9/41	9, 61
2378	ORF0398	SrpA	18-23, 42-55, 69-77, 85-98, 129- 136, 182-188, 214-220, 229-235, 242-248, 251-258, 281-292, 309- 316, 333-343, 348-354, 361-367, 393-407, 441-447, 481-488, 493- 505, 510-515, 517-527, 530-535, 540-549, 564-583, 593-599, 608- 621, 636-645, 656-670, 674-687, 697-708, 726-734, 755-760, 765- 772, 785-792, 798-815, 819-824, 826-838, 846-852, 889-904, 907- 913, 932-939, 956-964, 982-1000, 1008-1015, 1017-1024, 1028-1034, 1059-1065, 1078-1084, 1122-1129, 1134-1143, 1180-1186, 1188-1194, 1205-1215, 1224-1230, 1276-1283, 1333-1339, 1377-1382, 1415-1421, 1448-1459, 1467-1472, 1537-1545, 1556-1566, 1647-1654, 1666-1675, 1683-1689, 1722-1737, 1740-1754, 1756-1762, 1764-1773, 1775-1783, 1800-1809, 1811-1819, 1839-1851, 1859-1866, 1876-1882, 1930-1939, 1947-1954, 1978-1985, 1999-2007, 2015-2029, 2080-2086, 2094-2100, 2112-2118, 2196-2205, 2232-2243	C:1, D:7, F:4, H:11	aa 198-258 aa 646-727 aa 846-857 aa 2104- 2206	C:GSBYI73(646- 727): 2/9 F:SALAO33(846- 857):10/41 D:n.d.	8, 60
2466	ORF0302	YchH protein	16-38, 71-77, 87-94, 105-112, 124- 144, 158-164, 169-177, 180-186, 194-204, 221-228, 236-245, 250- 267, 336-343, 363-378, 385-394, 406-412, 423-440, 443-449	D:14	aa 401-494	D:n.d.	7, 59
2470	ORF0299	Conserved hypo- thetical protein	4-9, 17-41, 50-56, 63-69, 82-87, 108-115, 145-151, 207-214, 244- 249, 284-290, 308-316, 323-338, 348-358, 361-378, 410-419, 445- 451, 512-522, 527-533, 540-546, 553-558, 561-575, 601-608, 632- 644, 656-667, 701-713, 727-733, 766-780	C:3	aa 414-455	C:GSBYH60(414- 455):28/31	169,170

S. <i>aureus</i> antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant re- gion (positive/total)	Seq ID no: (DNA +Prot)
2498	ORF0267	Conserved hypo- thetical protein	33-43, 45-51, 57-63, 65-72, 80-96, 99-110, 123-129, 161-171, 173-179, 185-191, 193-200, 208-224, 227- 246, 252-258, 294-308, 321-329, 344-352, 691-707	D:12	aa 358-411 aa 588-606	D:17/21	6, 58
2548	ORF2711	IgG binding protein A	4-16, 24-57, 65-73, 85-91, 95-102, 125-132, 146-152, 156-163, 184- 190, 204-210, 214-221, 242-252, 262-268, 272-279, 300-311, 320- 337, 433-440, 472-480, 505-523	A:55, B:54, C:35, F:59, G:56, H:38	aa 1-48 aa 47-143 aa 219-285 aa 345-424	A:GSBXXK68(1- 73):21/30 A:GSBXXK41(47- 135):1/1 A:GSBXN38(219- 285):19/30 A:GSBXL11(322- 375):10/30 B:GSBXXB22(406- 418):37/71 F:SALAM17(406- 418):29/41	53, 105
2577	ORF2683	Hypothetical pro- tein	4-21, 49-56, 65-74, 95-112, 202- 208, 214-235	C:6	aa 99-171	C:GSBYL56(99- 171):1/1	149, 157
2642	ORF2614	unknown	34-58, 63-69, 74-86, 92-101, 130- 138, 142-150, 158-191, 199-207, 210-221, 234-249, 252-271	C:1, E:1	aa 5-48	C:bhe3(5- 48):25/30 ^w	52, 104
2664	ORF2593	Conserved hypo- thetical protein	7-37, 56-71, 74-150, 155-162, 183- 203, 211-222, 224-234, 242-272	D:35	aa 77-128	D:n.d.	51, 103
2670	ORF2588	Hexose transporter	18-28, 36-49, 56-62, 67-84, 86-95, 102-153, 180-195, 198-218, 254- 280, 284-296, 301-325, 327-348, 353-390, 397-402, 407-414, 431- 455	D:16	aa 328-394	D:n.d.	50, 102
2680	ORF2577	Coagulase	4-18, 25-31, 35-40, 53-69, 89-102, 147-154, 159-165, 185-202, 215- 223, 284-289, 315-322, 350-363, 384-392, 447-453, 473-479, 517- 523, 544-550, 572-577, 598-604, 617-623	C:26, G:4, H:8	aa 438-516 aa 505-570 aa 569-619	C:GSBYH16(438- 516):3/5 C:GSBYG24(505- 570):1/7 C:GSBYL82(569- 619):2/7	148, 156
2740	ORF2515	Hypothetical pro- tein	5-44, 47-55, 62-68, 70-78, 93-100, 128-151, 166-171, 176-308	D:4	aa 1-59	D:n.d.	49, 101
2746	ORF2507	homology with ORF1	5-12, 15-20, 43-49, 94-106, 110- 116, 119-128, 153-163, 175-180, 185-191, 198-209, 244-252, 254- 264, 266-273, 280-288, 290-297	A:1, H:13	aa 63-126	A:GSBXO40(66- 123):8/29	48, 100
2797	ORF2470	unknown	10-27, 37-56, 64-99, 106-119, 121- 136, 139-145, 148-178, 190-216, 225-249, 251-276, 292-297, 312- 321, 332-399, 403-458	B:3, E:2, F:13, H:3	aa 183-200 aa 349-363	B:GSBXE85(183- 200):11/27 F:SALAQ47(183- 200):8/41	47, 99

<i>S. aureus</i> antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant re- gion (positive/total)	Seq ID no: (DNA +Prot)
2798	ORF2469	Lipase (geh)	12-35, 93-99, 166-179, 217-227, 239-248, 269-276, 288-294, 296- 320, 322-327, 334-339, 344-356, 362-371, 375-384, 404-411, 433- 438, 443-448, 455-464, 480-486, 497-503, 516-525, 535-541, 561- 570, 579-585, 603-622, 633-641	A:41, B:42, C:3, F:35, G:1, H:11	aa 48-136 aa 128-172 aa 201-258	C:GSBYG01(48- 136):2/6 A:GSBXM31- bmd12(128- 188):11/30 B:GSBXE16(165- 177):10/30 A:GSBXN20(201- 258):8/30 F:SALAW05(165- 177):13/41	46, 98
2815	ORF2451	Conserved hypo- thetical protein	5-32, 34-49	D:21	aa 1-43	D.n.d.	45, 97
2914	ORF2351	metC	39-44, 46-80, 92-98, 105-113, 118- 123, 133-165, 176-208, 226-238, 240-255, 279-285, 298-330, 338- 345, 350-357, 365-372, 397-402, 409-415, 465-473, 488-515, 517- 535, 542-550, 554-590, 593-601, 603-620, 627-653, 660-665, 674- 687, 698-718, 726-739	A:1, C:14, F:2	aa 386-402	A:GSBXM18(386- 402):17/29	44, 96
2960	ORF2298	putative Exotoxin	13-36, 40-49, 111-118, 134-140, 159-164, 173-183, 208-220, 232- 241, 245-254, 262-271, 280-286, 295-301, 303-310, 319-324, 332- 339	C:101, E:2, H:58	aa 1-85 aa 54-121 aa 103-195	C:GSBYG32(1- 85):6/7 C:GSBYG61- bhe2(54-121):26/30 C:GSBYN80(103- 195):13/17	43, 95
2963	ORF2295	putative Exotoxin	13-28, 40-46, 69-75, 86-92, 114- 120, 126-137, 155-172, 182-193, 199-206, 213-221, 232-238, 243- 253, 270-276, 284-290	C:3, E:3, G:1	aa 22-100	C:GSBYJ58(22- 100):9/15	147, 155
3002	ORF1704	homology with ORF1	4-21, 28-40, 45-52, 59-71, 92-107, 123-137, 159-174, 190-202, 220- 229, 232-241, 282-296, 302-308, 312-331	A:2, C:1, H:4	aa 21-118	A:GSBXL06(21- 118):50/52	33, 85

<i>S. aureus</i> antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant re- gion (positive/total)	Seq ID no: (DNA +Prot)
3200	ORF1331	putative extracel- lular matrix bind- ing protein	6-15, 22-32, 58-73, 82-88, 97-109, 120-131, 134-140, 151-163, 179- 185, 219-230, 242-255, 271-277, 288-293, 305-319, 345-356, 368- 381, 397-406, 408-420, 427-437, 448-454, 473-482, 498-505, 529- 535, 550-563, 573-580, 582-590, 600-605, 618-627, 677-685, 718- 725, 729-735, 744-759, 773-784, 789-794, 820-837, 902-908, 916- 921, 929-935, 949-955, 1001-1008, 1026-1032, 1074-1083, 1088-1094, 1108-1117, 1137-1142, 1159-1177, 1183-1194, 1214-1220, 1236-1252, 1261-1269, 1289-1294, 1311-1329, 1336-1341, 1406-1413, 1419-1432, 1437-1457, 1464-1503, 1519-1525, 1531-1537, 1539-1557, 1560-1567, 1611-1618, 1620-1629, 1697-1704, 1712-1719, 1726-1736, 1781-1786, 1797-1817, 1848-1854, 1879-1890, 1919-1925, 1946-1953, 1974-1979	A:11, B:11, C:36	aa 5-134	A:GSBXL07(5- 134):6/28	29, 81

Table 2b: Additional immunogenic proteins identified by bacterial surface and ribosome display: *S. aureus*

Bacterial surface display: A, LSA250/1 library in fhuA with patient sera 1 (655); B, LSA50/6 library in lamB with patient sera 1 (484); C, LSA250/1 library in fhuA with IC sera 1 (571); E, LSA50/6 library in lamB with IC sera 2 (454); F, LSA50/6 library in lamB with patient sera P1 (1105); G, LSA50/6 library in lamB with IC sera 1 (471); H, LSA250/1 library in fhuA with patient sera 1 (IgA, 708). Ribosome display: D, LSA250/1 library with IC sera (1686). **, prediction of antigenic sequences longer than 5 amino acids was performed with the programme ANTIGENIC (Kolaskar and Tongaonkar, 1990). ORF, open reading frame; CRF, reading frame on complementary strand; ARF, alternative reading frame.

S. <i>aureus</i> antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ARF028 0	Putative protein	7-14	F:6	aa 25-43	SALAM59(25-43): 1/1	401, 402
CRF014 5	Putative protein	18-28, 31-37, 40-47, 51-83, 86-126	F:5	aa 81-90	SALAZ40(81-90): 2/12	403, 404
CRF025 0	Putative protein	4-24, 26-46, 49-86	G:8	aa 60-76	SALAJ87(60-76): n.d.	365, 378
CRF030 8	Putative protein	40-46	A:6, B:2, C:47, E:35	aa 5-38	A:GSBXK03(7-36):28/69 B:GSBXD29(10-20):10/27	391, 392
CRF033 7	Unknown	4-17	D:3	aa 1-20	D:n.d.	469; 486
CRF049 7	Putative protein	4-28, 31-53, 58-64	B:13, F:5	aa 18-34	GSBXF31(19-34): 1/7	366, 379
CRF053 8	Unknown	4-20	D: 7	aa 1-11	D:n.d.	470; 487
CRF075 0	Putative protein	4-11, 18-24, 35-40	G:44	aa 25-39	SALAG92(26-39): n.d.	367, 380
CRF114 5	Unknown	4-57	D:28	aa 16-32	D:n.d.	464; 481
CRF124 7	Putative protein	4-25, 27-56	F:6	aa 36-46	SALAR23(36-46): n.d.	368, 381
CRF125 6	Putative protein	19-25, 38-47, 55-74, 77-87	G:5	aa 54-67	SALAG65(54-67): n.d.	369, 382
CRF135 6	Unknown	8-15; 18-24; 27-38	D: 5	aa 5-33	D:n.d.	471; 488
CRF176 3	Putative protein	4-9, 23-41, 43-58, 71-85	C:3	aa 1-22	C:GSBYL30(1-22):1/1	407, 408
CRF178 3	Unknown	8-161	D: 5	aa 76-127	D:n.d.	465; 482
CRF184 5	Unknown	4-28; 30-36	D: 272	aa 1-17	D:n.d.	472; 489
CRF186 1	Unknown	6-11; 13-34; 36-50	D:8	aa 4-27	D:n.d.	466; 483
CRF192 8	Putative protein	4-9, 17-30	F:9	aa 13-22	SALAR41(13-22): n.d.	370, 383
CRF200 4	Putative protein	18-38	F:13	aa 16-32	SALAM75(16-32): n.d.	371, 384
CRF215 5	Putative protein	4-15, 30-58	F:9	aa 54-66	SALAQ54(54-66):1/12	372, 385
CRF218 0	Putative protein	4-61, 65-72, 79-95, 97-106	E:13	aa 86-99	GSBZE08(86-99): n.d.	373, 386
CRF220 7	Unknown	4-13	D: 3	aa 17-39	D:n.d.	473; 490
CRF230 5	Putative protein	4-9, 22-33, 44-60	C:5	aa 80-116	GSBYL75(80-116): n.d.	374, 387
CRF234 1	Putative protein	4-23, 30-44, 49-70	F:8	aa 46-55	SALAW31(46-55): n.d.	375, 388
CRF234 9	Putative protein	4-32, 39-46, 62-69, 77-83	B:10, F:4	aa 46-67	GSBXC92(52-67):2/11	376, 389

S. aureus antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of Identified Immuno-genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
CRF2356	Unknown	4-18	D: 3	aa 3-18	D:n.d.	475; 492
CRF2452	Unknown	4-31	D: 9	aa 7-21	D:n.d.	476; 493
CRF2498	Putative protein	4-29, 31-41	G:8	aa 2-15	SALAF30(3-15): n.d.	377, 390
CRF2553	Unknown	4-35; 37-42	D: 4	aa 1-20	D:n.d.	474; 491
CRF2578	Unknown	5-25; 30-39	D: 11	aa 9-30	D:n.d.	467; 484
CRF2664	Unknown	11-21	D: 17	aa 1-14	D:n.d.	477; 494
CRF2729	Putative protein	10-41, 50-57	F:3	aa 40-56	SALAQ25(40-56): 1/1	405, 406
CRF2863/1	Unknown	4-43	D: 78	aa 17-40	D:n.d.	478; 495
CRF2863/2	Unknown	4-46	D: 78	aa 44-49	D:n.d.	479; 496
CRFA002	Unknown	17-39; 52-59	D: 3	aa 38-55	D:n.d.	463; 480
CRFN1	Unknown	5-20; 37-44; 52-59; 87-94; 116-132	D: 4	aa 94-116	D:n.d.	468; 485
ORF0188	UDP-N-acetyl-D-mannosamine transferase, putative	11-18, 43-56, 58-97, 100-118, 120-148, 152-171, 195-203, 207-214, 220-227, 233-244	B:4, F:29	aa 197-210	SALAM14(198-209): n.d.	397, 398
ORF0254	Multidrug efflux transporter	4-33, 35-56, 66-99, 109-124, 136-144, 151-180, 188-198, 201-236, 238-244, 250-260, 266-290, 294-306, 342-377	D: 3	aa 155-175	D: n.d.	297, 325
ORF0307	Conserved hypothetical protein	4-23, 25-67, 76-107, 109-148	D: 3	aa 9-44	D: n.d.	298, 326
ORF0452	Conserved hypothetical protein	4-35, 41-47, 55-75, 77-89, 98-113, 116-140, 144-179, 194-215, 232-254, 260-273, 280-288, 290-302, 315-323, 330-369, 372-385, 413-432	D: 5	aa 105-122	D: n.d.	299, 327
ORF0456	Na ⁺ /H ⁺ Antiporter	4-81	D: 66	aa 1-21	D: n.d.	300, 328
ORF0556	Iron(III) dicitrate binding protein	5-23, 50-74, 92-99, 107-122, 126-142, 152-159, 172-179, 188-196, 211-218, 271-282	D: 10	aa 1-18	D: n.d.	301, 329
ORF0629	Hypothetical Protein	9-44, 63-69, 75-82, 86-106, 108-146, 153-161, 166-178, 185-192, 233-239, 258-266, 302-307	D: 313	aa 13-37	D: n.d.	302, 330

S. <i>aureus</i> antigeni c protein	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified Immuno- genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF063 7	GTP-binding protein TypA	10-19, 22-32, 95-105, 112-119, 121-133, 140-154, 162-174, 186-200, 207-224, 238-247, 254-266, 274-280, 288-294, 296-305, 343-351, 358-364, 366-373, 382-393, 403-413, 415-422, 440-447, 499-507, 565-575, 578-588	F:3	aa 107-119	F:SALAX70(107-119):10/41	393, 395
ORF071 3	Conserved hypothetical transmembrane protein, putative	22-51, 53-71, 80-85, 93-99, 105-112, 123-146, 151-157, 165-222, 226-236, 247-270, 290-296, 301-324, 330-348, 362-382, 384-391, 396-461, 463-482, 490-515	D: 3	aa 487 - 513	D: n.d.	303, 331
ORF078 8	Cell division pro- tein	104-111, 158-171, 186-197, 204-209, 230-247, 253-259, 269-277, 290-314, 330-340, 347-367, 378-388	D: 4	aa 152 - 178	D: n.d.	304, 332
ORF079 7	Conserved hypothetical protein	11-40, 56-75, 83-102, 112-117, 129-147, 154-168, 174-191, 196-270, 280-344, 354-377, 380-429, 431-450, 458-483, 502-520, 525-532, 595-602, 662-669, 675-686, 696-702, 704-711, 720-735, 739-748, 750-756, 770-779, 793-800, 813-822, 834-862	D:12	aa 196 -218	D: n.d.	305, 333
ORF083 6	Cell Division Pro- tein	34-91, 100-119, 126-143, 147-185, 187-197, 319-335, 349-355, 363-395, 397-412, 414-422, 424-440, 458-465, 467-475, 480-505, 507-529, 531-542, 548-553, 577-589, 614-632, 640-649, 685-704, 730-741, 744-751, 780-786	D:5	aa 26 - 56	D: n.d.	306, 334
ORF131 8	Amino acid per- mease	11-21, 25-32, 34-54, 81-88, 93-99, 105-117, 122-145, 148-174, 187-193, 203-218, 226-260, 265-298, 306-318, 325-381, 393-399, 402-421, 426-448	D: 8	aa127 - 152	D: n.d.	307, 335
ORF132 1	Pyruvat kinase	4-11, 50-67, 89-95, 103-109, 112-135, 139-147, 158-170, 185-204, 213-219, 229-242, 248-277, 294-300, 316-323, 330-335, 339-379, 390-402, 408-422, 431-439, 446-457, 469-474, 484-500, 506-513, 517-530, 538-546, 548-561	E:6	aa 420-432	E:GSBZE16(420-432):5/41	197, 216

S. <i>aureus</i> antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF138 8	LPXTG cell wall anchor motif	11-31, 86-91, 103-111, 175-182, 205-212, 218-226, 242-247, 260- 269, 279-288, 304-313, 329-334, 355-360, 378-387, 390-399, 407- 435, 468-486, 510-516, 535-547, 574-581, 604-615, 635-646, 653- 659, 689-696, 730-737, 802-812, 879-891, 893-906, 922-931, 954- 964, 997-1009, 1031-1042, 1089- 1096, 1107-1120, 1123-1130, 1149- 1162, 1176-1184, 1192-1207, 1209- 1215, 1253-1259, 1265-1275, 1282- 1295, 1304-1310, 1345-1361, 1382- 1388, 1394-1400, 1412-1430, 1457- 1462, 1489-1507, 1509-1515, 1535- 1540, 1571-1591, 1619-1626, 1635- 1641, 1647-1655, 1695-1701, 1726- 1748, 1750-1757, 1767-1783, 1802- 1807, 1809-1822, 1844-1875, 1883- 1889, 1922-1929, 1931-1936, 1951- 1967, 1978-1989, 1999-2008, 2023- 2042, 2056-2083, 2101-2136, 2161- 2177	D: 3	aa 508 - 523	D: n.d.	308, 336
ORF140 2	3,4-dihydroxy-2- butanone-4- phosphate syn- thase	18-23, 32-37, 54-63, 65-74, 83-92, 107-114, 123-139, 144-155, 157- 164, 191-198, 232-240, 247-272, 284-290, 295-301, 303-309, 311- 321, 328-341, 367-376	E:3	aa 121-137	E:GSBZB68(121-137):7/41	198, 217
ORF147 3	hemolysin II (LukD-Leuktoxin)	4-36, 39-47, 57-65, 75-82, 108-114, 119-126, 135-143, 189-195, 234- 244, 250-257, 266-272, 311-316	F:1	aa 245-256	F:SALAP76(245-256):6/41	199, 218
ORF152 3	Iron uptake regu- lator	13-27, 29-44, 46-66, 68-81, 97-116, 138-145	D:3	aa 120-135	D: n.d.	309, 337
ORF170 7	inner membrane protein, 60 kDa	4-23, 57-77, 89-103, 119-125, 132- 172, 179-197, 210-254, 256-265, 281-287	F:1	aa 104-118	F:SALBC82(104-118):7/41	200, 219
ORF175 4	amiB	5-10, 16-24, 62-69, 77-96, 100-115, 117-126, 137-156, 165-183, 202- 211, 215-225, 229-241, 250-260, 267-273, 290-300, 302-308, 320- 333, 336-342, 348-356, 375-382, 384-389	D: 3	aa 293 - 312	D: n.d.	310, 338

S. <i>aureus</i> antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF178 3	Mrp protein (fmtB)	5-29, 46-52, 70-76, 81-87, 155-170, 192-197, 206-213, 215-220, 225- 231, 249-258, 273-279, 281-287, 300-306, 313-319, 323-332, 335- 341, 344-351, 360-382, 407-431, 443-448, 459-468, 475-496, 513- 520, 522-537, 543-550, 556-565, 567-573, 580-585, 593-615, 619- 631, 633-642, 670-686, 688-698, 759-766, 768-782, 799-808, 842- 848, 868-877, 879-917, 945-950, 979-988, 996-1002, 1025-1036, 1065-1084, 1101-1107, 1113-1119, 1125-1142, 1163-1169, 1183-1189, 1213-1219, 1289-1301, 1307-1315, 1331-1342, 1369-1378, 1385-1391, 1410-1419, 1421-1427, 1433-1447, 1468-1475, 1487-1494, 1518-1529, 1564-1570, 1592-1609, 1675-1681, 1686-1693, 1714-1725, 1740-1747, 1767-1774, 1793-1807, 1824-1841, 1920-1937, 1953-1958, 1972-1978, 1980-1986, 1997-2011, 2048-2066, 2161-2166, 2219-2224, 2252-2257, 2292-2298, 2375-2380, 2394-2399, 2435-2440, 2449-2468	F:2	aa 850-860	F:SALAQ36(850-860):8/41	201, 220
ORF184 8	Map-ND2C protein	4-27, 42-66, 70-76, 102-107, 113- 118, 133-138	E:5	aa 75-90	E:GSBZB15(75-90):6/41	202, 221
ORF189 1	ribosomal protein L2 (rplB)	31-39, 48-54, 61-67, 75-83, 90-98, 103-119, 123-145, 160-167, 169- 176, 182-193, 195-206, 267-273	F:4	aa 239-257	F:SALAV36(239-257):19/41	203, 222
ORF201 1	Putative drug transporter	5-27, 79-85, 105-110, 138-165, 183- 202, 204-225, 233-259, 272-292, 298-320, 327-336, 338-345, 363- 376, 383-398, 400-422, 425-470, 489-495, 506-518, 536-544, 549- 554, 562-568, 584-598, 603-623	D:5	aa 205 - 224	D: n.d.	311, 339
ORF202 7	lactase permease, putative	10-33, 38-71, 73-103, 113-125, 132- 147, 154-163, 170-216, 222-248, 250-269, 271-278, 287-335, 337- 355, 360-374, 384-408, 425-442, 453-465, 468-476, 478-501, 508-529	E:2	aa 422-436	E:GSBZF58(422-436):6/41	204, 223
ORF208 7	Hemolysin II (putative)	8-27, 52-59, 73-80, 90-99, 104-110, 117-124, 131-140, 189-209, 217- 232, 265-279, 287-293, 299-306	D: 3	aa 126 - 147	D: n.d.	312, 340

S. aureus antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF2090	preLukS	8-26, 75-82, 118-126, 136-142, 163-177, 182-189, 205-215, 221-236, 239-248, 268-274	F:2	aa 270-284	F:SALAQ77(270-284):23/41	205, 224
ORF2092	Hemolysin II (preLUK-F)	5-22, 30-47, 58-65, 75-81, 87-92, 99-105, 107-113, 119-126, 189-195, 217-223, 234-244, 250-257, 266-272	F:3	aa 238-253	F:SALAQ67(237-252):10/41	206, 225
ORF2107	Multidrug resistance protein (putative)	10-28, 30-43, 50-75, 80-113, 116-125, 136-167, 170-191, 197-245, 253-329, 345-367, 375-396	D: 9	aa 54 - 104	D: n.d.	313, 341
ORF2192	Transcriptional regulator GntR family, putative	20-31, 46-52, 55-69, 74-79, 89-97, 108-113, 120-128, 141-171, 188-214	D: 3	aa 15 - 35	D: n.d.	314, 342
ORF2305	Amino acid permease	25-79, 91-103, 105-127, 132-149, 158-175, 185-221, 231-249, 267-293, 307-329, 336-343, 346-359, 362-405, 415-442, 446-468	D: 53	aa 363 - 393	D: n.d.	315, 343
ORF2324	Citrate transporter	10-77, 85-96, 99-109, 111-138, 144-155, 167-176, 178-205, 225-238, 241-247, 258-280, 282-294, 304-309, 313-327, 333-383, 386-402, 405-422, 429-453	D: 7	aa 37 - 83	D: n.d.	316, 344
ORF2422	Anion transporter family protein	7-26, 28-34, 36-53, 55-73, 75-81, 87-100, 108-117, 121-138, 150-160, 175-181, 184-195, 202-215, 221-247, 265-271, 274-314, 324-337, 341-412, 414-423, 425-440, 447-462, 464-469	D: 16	aa 275 - 295	D: n.d.	317, 345
ORF2553	SirA	5-22, 54-78, 97-103, 113-123, 130-148, 166-171, 173-180, 192-201, 254-261, 266-272, 310-322	D:3	aa 1 - 22	D: n.d.	318, 346
ORF2555	ornithine cyclodeaminase	20-35, 37-50, 96-102, 109-120, 123-137, 141-150, 165-182, 206-224, 237-256, 267-273, 277-291, 300-305, 313-324	E:2	aa 32-48	E:GSBZB37(32-48):11/41	207, 226
ORF2558	Multidrug resistance efflux protein, putative	11-63, 79-129, 136-191, 209-231, 237-250, 254-276, 282-306, 311-345, 352-373, 376-397	D: 8	aa 84 - 100	D: n.d.	319, 347
ORF2610	Cap5M	4-30, 34-40, 79-85, 89-98, 104-118, 124-139, 148-160, 167-178	D: 13	aa 114 - 141	D: n.d.	320, 348
ORF2613	Cap5P (UDP-N-acetylglucosamine 2-epimerase)	4-9, 17-24, 32-38, 44-54, 68-82, 89-95, 101-120, 124-131, 136-142, 145-157, 174-181, 184-191, 196-204, 215-224, 228-236, 243-250, 259-266, 274-281, 293-301, 314-319, 325-331, 355-367, 373-378	B:3, F:11	aa 321-341	F:SALAU27(325-337):9/41	208, 227

S. aureus antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF2628	Hypothetical protein	9-15, 28-36, 44-62, 69-88, 98-104, 111-136, 139-149, 177-186, 195-217, 224-236, 241-257, 260-278, 283-290, 292-373, 395-408, 411-443, 465-472, 475-496, 503-520, 552-559, 569-589, 593-599, 607-613, 615-636, 648-654, 659-687, 689-696, 721-733, 738-759, 783-789, 795-801, 811-823, 827-836, 839-851, 867-875, 877-883, 890-898, 900-908, 912-931, 937-951, 961-992, 994-1002, 1005-1011, 1016-1060, 1062-1074, 1088-1096, 1101-1123, 1137-1153, 1169-1192, 1210-1220, 1228-1239, 1242-1251, 1268-1275, 1299-1311, 1322-1330, 1338-1361, 1378-1384, 1393-1412, 1419-1425, 1439-1459, 1469-1482, 1489-1495, 1502-1519, 1527-1544, 1548-1555, 1600-1607, 1609-1617, 1624-1657, 1667-1691, 1705-1723, 1727-1742, 1749-1770, 1773-1787, 1804-1813, 1829-1837, 1846-1852, 1854-1864, 1869-1879, 1881-1896, 1900-1909, 1922-1927, 1929-1935, 1942-1962, 1972-2005, 2009-2029, 2031-2038, 2055-2076, 2101-2114, 2117-2124, 2147-2178, 2188-2202, 2209-2217, 2224-2230, 2255-2266, 2271-2280, 2282-2302, 2307-2316, 2319-2324, 2379-2387	F:6	aa 694-708 aa 790-800 aa 1288-1305	F:SALBD82(1288-1303):9/41	209, 228
ORF2644	PTS system, sucrose-specific IIBC component	8-15, 24-30, 49-68, 80-93, 102-107, 126-147, 149-168, 170-180, 185-193, 241-305, 307-339, 346-355, 358-372, 382-390, 392-415, 418-425, 427-433, 435-444, 450-472	F:4	aa 106-159	F:SALAW60(106-125):3/41	210, 229
ORF2654	Oligopeptide ABC transporter, putative	5-61, 72-84, 87-99, 104-109, 124-145, 158-170, 180-188, 190-216, 223-264, 270-275, 296-336, 355-372	D: 5	aa 182-209	D: n.d.	321, 349
ORF2662	maltose ABC transporter, putative	4-21, 71-79, 99-105, 110-121, 143-161, 199-205, 219-235, 244-258, 265-270, 285-291, 300-308, 310-318, 322-328, 346-351, 355-361, 409-416	F:1	aa 306-323	F:SALBC05(306-323):2/41	211, 230

<i>S. aureus</i> antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF2710	sorbitol dehydrogenase	4-12, 19-40, 61-111, 117-138, 140-153, 161-180, 182-207, 226-235, 237-249, 253-264, 267-274, 277-292, 311-323	B:2, F:4	aa 244-257	F:SALAX93(249-256):6/41	212, 231
ORF2742	Hypothetical protein	4-41, 49-56, 61-67, 75-82, 88-104, 114-125, 129-145, 151-165, 171-178, 187-221, 224-230, 238-250, 252-275, 277-304, 306-385	D: 188, H:4	aa 303 - 323	D: n.d.	322, 350
ORF2780	brnQ	4-29, 41-63, 74-95, 97-103, 107-189, 193-209, 220-248, 260-270, 273-299, 301-326, 328-355, 366-397, 399-428	D: 3	aa 26 - 40	D: n.d.	323, 351
ORF2806	Phage related protein	10-17, 23-29, 31-37, 54-59, 74-81, 102-115, 127-137, 145-152, 158-165, 178-186, 188-196, 203-210, 221-227, 232-237	F:3	aa 104-116	F:SALBC34:1/1	213, 232
ORF2900	Conserved hypothetical protein	4-27, 34-43, 62-73, 81-90, 103-116, 125-136, 180-205, 213-218, 227-235, 238-243, 251-259, 261-269, 275-280, 284-294, 297-308, 312-342, 355-380, 394-408, 433-458, 470-510, 514-536, 542-567	D: 24	aa 360 - 376	D: n.d.	324, 352
ORF2931	conserved hypothetical protein	4-19, 43-54, 56-62, 84-90, 96-102, 127-135, 157-164, 181-187	E:6	aa 22-37	E:GSBZA13(22-37):7/41	214, 233
ORF2958	Exotoxin 2	7-19, 26-39, 44-53, 58-69, 82-88, 91-107, 129-141, 149-155, 165-178, 188-194	F:1	aa 154-168	F:SALBB59(154-168):4/41	215, 234
ORF2970	Surface protein, putative	9-23, 38-43, 55-60, 69-78, 93-101, 103-112, 132-148, 187-193, 201-208, 216-229, 300-312, 327-352, 364-369, 374-383, 390-396, 402-410, 419-426, 463-475, 482-491	H:5	aa 1-70	H:GSBYU66: n.d.	399, 400

Table 2c: Immunogenic proteins identified by bacterial surface and ribosome display: *S. epidermidis*.

Bacterial surface display: A, LSE150 library in fhuA with patient sera 2 (957); B, LSE70 library in lamB with patient sera 2 (1420); C, LSE70 library in lamB with patient sera 1 (551). Ribosome display: D, LSE150 in pMAL4.31 with P2 (1235). **, prediction of antigenic sequences longer than 5 amino acids was performed with the programme ANTIGENIC (Kolaskar and Tongaonkar,

1990). ORF, open reading frame; ARF, alternative reading frame; CRF, reading frame on complementary strand. ORF, open reading frame; CRF, reading frame on complementary strand.

S. epidermidis antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ARF0172	cation-transporting ATPase, E1-E2 family	4-34, 37-43	D:6	aa3-32	D: nd	497, 548
ARF0183	condensing enzyme, putative, FabH-related	4-22, 24-49	D:4	aa1-52	D: nd	498, 549
ARF2455	NADH dehydrogenase, putative	4-29	D:3	aa1-22	D: nd	499, 550
CRF0001	Unknown	4-14, 16-26	D:3	aa5-21	D: nd	500, 551
CRF0002	Unknown	4-13, 15-23, 36-62	D:5	aa21-70	D: nd	501, 552
CRF0003	Unknown	4-12, 14-28	D:3	aa 4-31	D: nd	502, 553
CRF0004	Unknown	5-15, 35-71, 86-94	D:4	aa31-72	D: nd	503, 554
CRF0005	Unknown	8-26, 28-34	D:3	aa:9-33	D: nd	504, 555
CRF0006	Unknown	4-11, 15-28	D:3	aa10-22	D: nd	505, 556
CRF0007	Unknown	4-19, 30-36	D:3	aa 7-44	D: nd	506, 557
CRF0008	Unknown	10-48	D:4	aa:9-44	D: nd	507, 558
CRF0009	Unknown	41883	D:3	aa5-14	D: nd	508, 559
CRF0192	Putative protein	4-23, 25-68	C:4	aa 15-34	C:GSBBM10(15-34): n.d.	445, 446

S. <i>epidermidis</i> antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
CRF0275	Putative protein	4-40, 49-65	B:5	aa 35-68	B:SELAK28(35-68): n.d.	447, 448
CRF0622	Putative protein	4-12, 17-57, 62-70, 75-84, 86-100	C:4	aa 75-99	C:GSBBR74(76-99): n.d.	449, 450
CRF0879	Putative protein	4-14, 38-44	A:3, B:10	aa 9-40	B:SELAC39(10-40): n.d.	451, 452
CRF1004	Putative protein	4-40	A:3, B:5	aa 29-65	B:SELA163(35-63): n.d.	453, 454
CRF2248	Putative protein	4-10, 19-40, 53-64, 74-91	C:30	aa 74-111	C:GSBBN64(16-35): n.d.	455, 456
CRF2307	Putative protein	4-19, 35-41, 80-89	A:19	aa 41-87	A:SEFAL47(41-87):n.d.	457, 458
CRF2309	Putative protein	15-21	B:6	aa 4-16	B:SELAL02(4-16): n.d.	459, 460
CRF2409	Putative protein	6-25	B:6	aa 2-24	B:SELAB48(5-24): n.d.	461, 462
ORF0005	hypothetical pro- tein	13-27, 33-67, 73-99, 114-129, 132- 158, 167-190, 193-234, 237-267, 269-299, 316-330, 339-351, 359- 382, 384-423	D:3	aa105-128	D: nd	509, 560
ORF0008	Streptococcal he- magglutinin	9-14, 16-24, 26-32, 41-50, 71-79, 90-96, 177-184, 232-237, 271-278, 293-301, 322-330, 332-339, 349- 354, 375-386, 390-396, 403-409, 453-459, 466-472, 478-486, 504- 509, 518-525, 530-541, 546-552, 573-586, 595-600, 603-622, 643- 660, 668-673, 675-681, 691-697, 699-711, 713-726, 732-749, 753- 759, 798-807, 814-826, 831-841, 846-852, 871-878, 897-904, 921- 930, 997-1003, 1026-1031, 1033- 1039, 1050-1057, 1069-1075, 1097- 1103, 1105-1111, 1134-1139, 1141- 1147, 1168-1175, 1177-1183, 1205- 1211, 1213-1219, 1231-1237, 1241- 1247, 1267-1273, 1304-1309, 1311- 1317, 1329-1335, 1339-1345, 1347- 1353, 1382-1389, 1401-1407, 1411- 1417, 1447-1453, 1455-1461, 1483- 1489, 1491-1497, 1527-1533, 1545- 1551, 1556-1561, 1581-1587, 1591- 1597, 1627-1638, 1661-1667, 1684- 1689, 1691-1697, 1708-1715, 1719- 1725, 1765-1771, 1813-1820, 1823- 1830, 1835-1856	B:2	aa 895-926	B:SELA79(895-926): 7/12	239, 268

S. epidermidis antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified Immuno-genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF0038	extracellular elastase precursor	6-25, 29-35, 39-45, 64-71, 82-88, 96-102, 107-113, 119-131, 170-176, 186-192, 196-202, 215-220, 243-248, 302-312, 345-360, 362-371, 378-384, 458-470, 478-489, 495-504	C:6	aa 136-165	C:GSBBN08(136-165):1/1	353,359
ORF0099	hypothetical protein	6-18, 31-37, 42-49, 51-67, 73-85, 87-93, 102-109, 119-126, 150-157, 170-179, 185-191, 204-214, 217-223, 237-248, 269-275, 278-316, 320-340, 359-365	D:5	aa218-265	D: nd	510, 561
ORF0101	hypothetical protein	4-10, 15-27, 67-94, 123-129, 167-173, 179-184, 187-198, 217-222, 229-235, 238-246	D:18	aa26-109	D: nd	511, 562
ORF0121	C4-dicarboxylate transporter, anaerobic, putative	4-20, 24-62, 73-86, 89-106, 110-122, 131-164, 169-193, 204-213, 219-236, 252-259, 263-281, 296-306, 318-324, 328-352, 356-397, 410-429	D:5	aa323-379	D: nd	512, 563
ORF0143	amino acid permease	25-79, 91-103, 105-127, 132-150, 157-174, 184-206, 208-219, 231-249, 267-294, 310-329, 336-343, 346-405, 417-468	D:35	aa247-339	D: nd	513, 564
ORF0162	Immunodominant Antigen A	4-27, 35-45, 52-68, 83-89, 113-119, 133-150, 158-166, 171-176, 198-204, 219-230	A:11, B:11, C:153	aa 90-227	B:SELAA19(100-118): 1/1 B:SELAE24(170-190): 11/12	240, 269
ORF0201	capa protein, putative	10-17, 27-53, 81-86, 98-105, 126-135, 170-176, 182-188, 203-217, 223-232, 246-252, 254-269, 274-280, 308-314	D:9	aa11-53	D: nd	514, 565
ORF0207	Ribokinase (rbsK)	5-11, 15-23, 47-55, 82-90, 98-103, 108-114, 126-132, 134-156, 161-186, 191-197, 210-224, 228-235, 239-248, 258-264, 275-290	B:10	aa 20-45	B:SELAQ30 (20-45): 12/12	241, 270
ORF0288	LrgB	7-28, 34-56, 68-119, 127-146, 149-180, 182-189, 193-200, 211-230	D:4	aa112-149	D: nd	515, 566

S. epidermidis antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immuno-genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot).
ORF0304	Herpesvirus saimiri ORF73 homolog, putative	8-16, 30-36, 83-106, 116-122, 135-143, 152-165, 177-188, 216-225	D:8	aa69-117	D: nd	516, 567
ORF0340	nitrate transporter	7-21, 24-93, 101-124, 126-139, 141-156, 163-179, 187-199, 202-242, 244-261, 267-308, 313-322, 340-353, 355-376	D:5	aa238-309	D: nd	517, 595
ORF0346	hypothetical protein	8-27, 65-73, 87-93, 95-105	D:8	aa 1-29	D: nd	518, 568
ORF0355	conserved hypothetical protein	5-30, 37-43, 57-66, 85-94, 103-111, 118-125	C:5	aa 63-86	C:GSBBL39(63-86):1/1	354, 360
ORF0356	conserved hypothetical protein	4-14, 21-53, 60-146, 161-173, 175-182, 190-198, 200-211	D:5	aa51-91	D: nd	519, 569
ORF0406	hypothetical protein	12-32, 35-63, 68-102, 106-137, 139-145, 154-168, 173-185, 203-222, 230-259, 357-364, 366-374	D:19	aa1-48, aa69-102	D: nd	520, 570
ORF0425	amino acid permease	40-58, 75-86, 93-110, 117-144, 150-173, 199-219, 229-260, 264-300, 317-323, 329-356, 360-374, 377-390, 392-398, 408-424, 427-452	D:3	aa401-440	D: nd	521, 571
ORF0442	SceB precursor	7-22, 42-48, 55-66, 83-90, 109-118, 136-141	C:38	aa 60-102	C:GSBBM60(65-84):1/1	355, 361
ORF0448	SsaA precursor	6-25, 39-47, 120-125, 127-135, 140-148, 157-168, 200-208, 210-220, 236-243, 245-254	C:170	aa 15-208	C:GSBBN58(81-105):1/1 C:GSBBL13(167-184):1/1 C:GSBBL25(22-45):1/1	356, 362
ORF0503	Ribosomal protein L2	31-39, 48-54, 61-67, 75-83, 90-98, 103-115, 123-145, 160-167, 169-176, 182-193, 195-206, 267-273	A:1, B:3	aa 212-273	B:SELAA47(238-259):12/12	242, 271
ORF0551	Conserved hypothetical protein	5-25, 29-36, 45-53, 62-67, 73-82, 84-91, 99-105, 121-142, 161-177, 187-193, 203-224, 242-251, 266-271, 278-285	A:16, B:9	aa 162-213	B:SELAL12(164-197): 8/12	243, 272
ORF0556	hypothetical protein	4-24, 30-41, 43-68, 82-90, 107-114, 123-143, 155-168	D:3	aa 1-26	D: nd	522, 596


S. <i>epidermidis</i> antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF0623	Fumble, putative	10-17, 32-38, 55-72, 77-84, 88-96, 126-134, 152-160, 176-185, 190- 203, 208-214, 217-225, 233-252, 257-262	A:10, B:12; C:1	aa 95-150	B:SELAB86(95-128): 3/12	244, 273
ORF0740	Hypothetical pro- tein	18-24, 47-61, 69-83, 90-96, 125- 132, 140-163, 171-188, 222-249, 281-296, 305-315, 322-330, 335- 351, 354-368, 390-397, 411-422, 424-431, 451-469, 479-485, 501- 507, 517-524, 539-550, 560-568, 588-599, 619-627, 662-673, 678- 689, 735-742, 744-749, 780-786, 797-814, 821-827, 839-847, 857- 863, 866-876, 902-911, 919-924, 967-982, 1005-1015, 1020-1026, 1062-1070, 1078-1090, 1125-1131, 1145-1150, 1164-1182, 1208-1213, 1215-1234, 1239-1251, 1256-1270, 1298-1303, 1316-1325, 1339-1349, 1362-1369, 1373-1384, 1418-1427, 1440-1448, 1468-1475, 1523-1532, 1536-1542, 1566-1573, 1575-1593, 1603-1619, 1626-1636, 1657-1667, 1679-1687, 1692-1703, 1711-1718, 1740-1746, 1749-1757, 1760-1769, 1815-1849, 1884-1890, 1905-1914, 1919-1925, 1937-1947, 1955-1963, 1970-1978, 2003-2032, 2075-2089, 2117-2124, 2133-2140, 2146-2151, 2161-2167, 2173-2179, 2184-2196, 2204-2220, 2244-2254, 2259-2264, 2285-2296, 2300-2318, 2328-2334, 2347-2354, 2381-2388, 2396-2408, 2419-2446, 2481-2486, 2493-2500, 2506-2516, 2533-2540, 2555-2567, 2576-2592, 2599-2606, 2615-2639, 2647-2655	B:3	aa 1093- 1114	B:SELAB23(1097-1114): 7/12	245, 274
ORF0757	hypothetical protein	13-20, 22-28, 33-40, 60-76, 79-86, 90-102, 112-122, 129-147, 157-170, 178-185, 188-193, 200-205, 218- 228, 234-240, 243-250, 265-273, 285-291, 310-316, 330-348, 361- 380, 399-405, 427-446, 453-464	C:6	aa 260-284	C:GSBBN01(260-284): 1/1	357, 363

S. <i>epidermidis</i> antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF0912	DNA mismatch repair protein	9-16, 28-39, 47-56, 69-76, 104-121, 124-130, 137-144, 185-195, 199- 214, 238-243, 293-307, 317-337, 351-370, 385-390, 411-428, 472- 488, 498-516, 518-525, 528-535, 538-545, 553-559, 563-568, 579- 588, 592-607, 615-622, 632-638, 641-648, 658-674, 676-705, 709- 720, 727-739, 742-750, 753-760, 768-773, 783-788, 811-819, 827- 838	A:25	aa 242-304	SEFAT31(242-290): n.d.	441, 442
ORF0923	GTP-binding protein	4-10, 18-27, 42-55, 64-72, 77-92, 114-126, 132-157, 186-196, 206- 217, 236-243, 257-280, 287-300, 306-312, 321-328, 338-351, 360- 367, 371-382, 385-399	B:13	aa 144-163	B:SELAD55(151-163): 8/12	246, 275
ORF0979	Conserved hypo- thetical protein	4-28, 44-51, 53-84, 88-107, 113- 192	A:9, B:18	aa 12-51	B:SELAH01(26-49):5/12	247, 276
ORF0982	sodium/alanine symporter (alsT)	13-21, 24-50, 73-84, 91-118, 126- 133, 142-149, 156-175, 189-249, 251-273, 294-332, 339-347, 358- 381, 393-413, 425-448, 458-463	D:3	aa277-305	D: nd	523, 572
ORF1230	Signal peptidase I	6-33, 44-59, 61-69, 74-82, 92-98, 133-146, 163-175	D:14	aa 1-53	D: nd	524, 573
ORF1232	Exonuclease RexA	4-12, 16-32, 36-48, 50-65, 97-127, 136-142, 144-165, 176-190, 196- 202, 211-222, 231-238, 245-251, 268-274, 280-286, 305-316, 334- 356, 368-376, 395-402, 410-417, 426-440, 443-449, 474-486, 499- 508, 510-525, 540-549, 568-576, 608-617, 624-639, 646-661, 672- 678, 688-703, 706-717, 727-734, 743-755, 767-773, 783-797, 806- 814, 830-839, 853-859, 863-871, 877-895, 899-918, 935-948, 976- 990, 998-1007, 1020-1030, 1050- 1062, 1070-1077, 1111-1125, 1137- 1149, 1153-1160, 1195-1211	B:6	aa 188-219	B:SELAA13(188-216): n.d.	443, 444
ORF1284	permease PerM, putative	10-60, 72-96, 103-109, 127-133, 146-177, 182-189, 196-271, 277- 289, 301-319, 323-344, 347-354	D:27	aa55-106	D: nd	525, 574

S. epidermidis antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF1319	2-oxoglutarate decarboxylase (menD)	9-31, 36-45, 59-67, 71-81, 86-94, 96-107, 111-122, 127-140, 153-168, 180-211, 218-224, 226-251, 256-270, 272-289, 299-305, 310-323, 334-341, 345-353, 358-364, 369-379, 384-390, 396-410, 417-423, 429-442, 454-464, 470-477, 497-505, 540-554	B:5; C:1	aa 400-413	B:SELAF54(404-413): 11/12	248, 277
ORF1326	autolysin AtlE (lytD)	6-25, 40-46, 75-81, 150-155, 200-205, 237-243, 288-295, 297-306, 308-320, 341-347, 356-363, 384-391, 417-429, 440-452, 465-473, 481-514, 540-546, 554-560, 565-577, 585-590, 602-609, 611-617, 625-634, 636-643, 661-668, 676-684, 718-724, 734-742, 747-754, 766-773, 775-781, 785-798, 800-807, 825-832, 840-857, 859-879, 886-892, 917-923, 950-956, 972-978, 987-1002, 1028-1035, 1049-1065, 1071-1099, 1111-1124, 1150-1172, 1185-1190, 1196-1207, 1234-1241, 1261-1271, 1276-1281, 1311-1320, 1325-1332	B:7; C:5	aa 1282-1298	B:SELAD20(1282-1298): 10/12	249, 278
ORF1333	quinol oxidase polypeptide iv (ec 1.9.3.-) (quinol oxidase aa3-600, subunit qoxd)	4-27, 33-55, 66-88	D:4	aa 3-93	D: nd	526, 575
ORF1356	hypothetical protein	9-36, 44-67, 74-97, 99-149, 161-181, 189-198, 211-224, 245-253, 267-273, 285-290, 303-324, 342-394, 396-427	D:32	aa54-95	D: nd	527, 597
ORF1373	dihydrolipoamide acetyltransferase	33-39, 42-78, 103-109, 126-136, 184-191, 225-232, 258-279, 287-294, 306-315, 329-334, 362-379, 381-404, 425-430	A:3, B:1	aa 124-188	A:SEFAP57(124-188): 2/12	250, 279
ORF1381	hypothetical protein	21-45, 62-67, 74-106, 108-142, 154-160, 230-236, 245-251, 298-305	D:5	aa7-44	D: nd	528, 576

S. <i>epidermidis</i> antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF1420	Muts2 protein, putative	8-32, 34-41, 46-55, 70-76, 81-89, 97-115, 140-148, 153-159, 165-171, 175-188, 207-239, 256-276, 280- 289, 297-319, 321-335, 341-347, 352-360, 364-371, 384-411, 420- 440, 449-460, 495-502, 505-516, 560-566, 573-588, 598-605, 607- 614, 616-624, 674-694, 702-717	B:7	aa 581-608	B:SELAM40(581-604): 9/12	251, 280
ORF1443	cell division protein (divIB)	61-66, 111-117, 148-155, 173-182, 194-224, 263-293, 297-303, 313- 321, 334-343, 345-356, 375-381, 384-395, 408-429, 448-454	D:4	aa 175-229	D: nd	529, 577
ORF1500	Cell division pro- tein FtsY	100-107, 154-167, 182-193, 200- 206, 223-231, 233-243, 249-257, 265-273, 298-310, 326-336, 343- 362, 370-384	A:2, B:3	aa 77-182	B:SELAP37(139-162): 9/12	252, 281
ORF1665	amino acid ABC transporter, permease protein	4-25, 44-55, 66-76, 82-90, 93-99, 104-109, 176-209, 227-242, 276- 283, 287-328, 331-345, 347-376, 400-407, 409-416, 418-438, 441- 474	D:5	aa 1-52	D: nd	530, 578
ORF1707	putative host cell surface-exposed lipoprotein	12-31, 40-69, 129-137, 140-151, 163-171, 195-202, 213-218	D:4	aa 20-76	D: nd	531, 598
ORF1786	D-3- phosphoglycerate dehydrogenase, putative	4-10, 16-32, 45-55, 66-78, 87-95, 103-115, 118-124, 135-150, 154- 161, 166-174, 182-193, 197-207, 225-231, 252-261, 266-304, 310- 315, 339-347, 351-359, 387-402, 411-423, 429-436, 439-450, 454- 464, 498-505, 508-515	D:5	aa400-442	D: nd	532, 579
ORF1849	yhjN protein	8-51, 53-69, 73-79, 85-132, 139- 146, 148-167, 179-205, 212-224, 231-257, 264-293, 298-304, 309- 317, 322-351	D:5	aa254-301	D: nd	533, 580

S. epidermidis antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF1877	protein-export membrane protein SecD (secD-1)	6-19, 26-39, 41-51, 59-67, 72-85, 91-98, 104-111, 120-126, 147-153, 158-164, 171-178, 199-209, 211-218, 233-249, 251-257, 269-329, 362-368, 370-385, 392-420, 424-432, 454-489, 506-523, 534-539, 550-556, 563-573, 576-596, 603-642, 644-651, 655-666, 685-704, 706-733, 747-753	D:7	aa367-409	D: nd	534, 581
ORF1912	unknown conserved protein (conserved)	23-35, 37-70, 75-84, 90-112, 129-135, 137-151, 155-180, 183-209, 211-217, 219-225, 230-248, 250-269, 274-284, 289-320, 325-353, 357-371, 374-380, 384-399, 401-411,	D:4	aa131-187	D: nd	535, 582
ORF2015	Trehalose-6-phosphate hydrolase	8-17, 30-54, 82-89, 94-103, 157-166, 178-183, 196-204, 212-219, 222-227, 282-289, 297-307, 345-364, 380-393, 399-405, 434-439, 443-449, 453-475, 486-492, 498-507, 512-535, 538-548	A:3, B:8	aa 465-498	B:SELAH62(465-498): 5/12	253, 282
ORF2018	Glucose-6-phosphate 1-DH	4-16, 21-27, 39-51, 60-69, 76-83, 97-118, 126-132, 159-167, 171-177, 192-204, 226-240, 247-259, 281-286, 294-305, 314-320, 330-338, 353-361, 367-372, 382-392, 401-413, 427-434, 441-447, 457-463	B:17	aa 250-287	B:SELA119(250-279): 3/12	254, 283
ORF2040	LysM domain protein protein	51-56, 98-108, 128-135, 138-144, 152-158, 177-192, 217-222, 232-251, 283-305, 406-431, 433-439	D:23	aa259-331	D: nd	536, 583
ORF2098	PilB related protein	13-18, 36-43, 45-50, 73-79, 95-100, 111-126, 133-139	A:60	aa 1-57	A:SEFAQ50(15-57): 5/12	255, 284
ORF2139	sodium:sulfate symporter family protein, putative	7-12, 22-97, 105-112, 121-128, 130-146, 152-164, 169-189, 192-203, 211-230, 238-246, 260-281, 304-309, 313-325, 327-357, 367-386, 398-444, 447-476, 491-512	D:41	aa42-118	D: nd	537, 584

<i>S. epidermidis</i> antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immuno-genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF2172	SceB precursor (lytE)	4-23, 28-34, 38-43, 45-51, 63-71, 85-96, 98-112, 118-126, 167-174, 179-185, 219-228, 234-239, 256-263	A:438, B:40, D:4	aa 6-215	B:SELAH53(188-209): 3/12	256, 285
ORF2200	zinc ABC transporter, permease protein, putative	4-31, 33-40, 48-64, 66-82, 92-114, 118-133, 137-159, 173-246, 248-266	D:19	aa162-225	D: nd	538, 585
ORF2248	membrane protein, MmpL family, putative	4-11, 17-34, 72-78, 127-137, 178-227, 229-255, 262-334, 352-380, 397-405, 413-419, 447-454, 462-467, 478-490, 503-509, 517-558, 560-568, 571-576, 582-609, 623-629, 631-654, 659-710, 741-746, 762-767, 771-777, 788-793, 856-867	D:17	aa1-59, aa159-225, aa634-674	D: nd	539, 586 
ORF2260	Unknown conserved protein in others	5-10, 18-29, 31-37, 66-178, 196-204, 206-213	B:4	aa 123-142	B:SELAG77(123-142): 12/12	257, 286
ORF2282	conserved hypothetical protein	16-22, 41-50, 52-64, 66-74, 89-95, 107-114, 123-130, 135-159, 167-181, 193-199, 223-231, 249-264, 279-289	A:4	aa 51-97	A:SEFAR88(51-97): 3/12	258, 287
ORF2376	DivIC homolog, putative	27-56, 102-107, 111-116	D:7	aa15-58	D: nd	540, 587
ORF2439	membrane-bound lytic murein transglycosidase D, putative	4-9, 11-26, 36-56, 59-73, 83-100, 116-130, 148-163, 179-193, 264-270, 277-287, 311-321	A:459, B:2, D:53	aa 10-217	B:SELAC31(75-129): 12/12	259, 288
ORF2493	conserved hypothetical protein	4-29, 37-77, 80-119	D:6	aa69-113	D: nd	541, 588
ORF2535	ATP-binding cassette transporter-like protein, putative	5-28, 71-81, 101-107, 128-135, 146-52, 178-188, 209-214, 224-233, 279-294, 300-306, 318-325, 342-347, 351-357	D:8	aa1-65	D: nd	542, 589

S. epidermidis antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF2627	cation-transporting ATPase, E1-E2 family, putative	8-31, 34-80, 125-132, 143-153, 159-165, 176-189, 193-198, 200-206, 215-242, 244-262, 264-273, 281-289, 292-304, 318-325, 327-338, 347-371, 404-416, 422-429, 432-450, 480-488, 503-508, 517-525, 539-544, 551-562, 574-587, 600-631, 645-670	D:3	aa61-105	D: nd	543, 590
ORF2635	Hypothetical protein	4-10, 17-24, 26-42, 61-71, 90-96, 102-111, 117-125, 158-164, 173-182, 193-201, 241-255, 268-283, 289-298, 305-319, 340-353, 360-376, 384-390, 394-406	A:2, B:2	aa 139-169	B:SELAB63(138-163): 7/12	260, 289
ORF2669	Hypothetical protein	4-21, 35-42, 85-90, 99-105, 120-125, 148-155, 175-185, 190-196, 205-210, 217-225	A:14, B:8	aa 22-81	B:SELA27(22-51): 5/12	261, 290
ORF2671	Hypothetical protein	4-23, 43-49, 73-84, 93-98, 107-113, 156-163, 179-190, 197-204, 208-218, 225-231, 248-255	A:44, B:14	aa 23-68	B:SELAD21(36-61): 5/12	262, 291
ORF2673	Hypothetical protein	4-20, 65-71, 99-105, 148-155, 171-182, 190-196, 204-210, 221-228, 240-246	A:16, B:3	aa 23-68	B:SELA25(23-54): 2/12	263, 292
ORF2694	Hypothetical protein	4-26, 93-98, 121-132, 156-163, 179-192, 198-204, 212-220, 225-238	A:19, B:30	aa 25-82	B:SELAB26(27-60): 5/12	264, 293
ORF2695	Hypothetical protein	4-26, 43-50, 93-98, 107-113, 156-163, 179-190, 198-204, 212-218, 225-231, 247-254	A:7	aa 22-78	A:SEFAH77(22-66): 6/12	265, 294
ORF2719	two-component sensor histidine kinase, putative	5-52, 60-71, 75-84, 91-109, 127-135, 141-156, 163-177, 185-193, 201-214, 222-243, 256-262, 270-279, 287-293, 298-303, 321-328, 334-384, 390-404, 411-418, 427-435, 438-448, 453-479, 481-498, 503-509	B:4	aa 123-132	B:SELAA62(123-132): 6/12	266, 295
ORF2728	Accumulation-associated protein	4-13, 36-44, 76-86, 122-141, 164-172, 204-214, 235-242, 250-269, 291-299, 331-337, 362-369, 377-396, 419-427, 459-469, 505-524, 547-555, 587-597, 618-625, 633-652, 675-683, 715-727, 740-753, 761-780, 803-811, 842-853, 962-968, 1006-1020	A:265, B:448, C:4, D:9	aa 803-1001	B:SELAA10(850-878): 11/12	267, 296

- 90 -

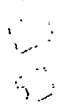
S. <i>epidermidis</i> antigenic protein	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immuno- genic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF2740	lipase precursor 	4-21, 190-200, 218-228, 233-241, 243-261, 276-297, 303-312, 316- 325, 346-352, 381-387, 436-442, 457-462, 495-505, 518-532, 543- 557, 574-593	C:3	aa 110-177	C:GSBBL80(110-177):1/1	358, 364
ORF2764	oligopeptide ABC transporter, per- mease protein, putative	14-36, 62-131, 137-147, 149-162, 164-174, 181-207, 212-222, 248- 268, 279-285	D:4	aa 6-41	D: nd	544, 591
ORF2767	unknown con- served protein in others	7-20, 22-35, 40-50, 52-61, 63-92, 94-101, 103-126, 129-155, 161-178, 192-198, 200-208, 210-229, 232- 241, 246-273, 279-332, 338-359, 369-383	D:4	aa276-316	D: nd	545, 592
ORF2809	sodium:sulfate symporter family protein	4-29, 37-53, 56-82, 87-100, 108- 117, 121-138, 150-160, 175-180, 189-195, 202-214, 220-247, 269- 315, 324-337, 341-355, 361-412, 414-423, 425-440, 447-467	D:9	aa266-317, aa357-401	D: nd	546, 593
ORF2851	putative trans- membrane efflux protein	7-13, 20-32, 37-90, 93-103, 107- 126, 129-155, 159-173, 178-189, 195-221, 234-247, 249-255, 268- 303, 308-379	D:11	aa137-185	D: nd	547, 594

Table 2d: Immunogenic proteins identified by bacterial surface and ribosome display: *S. aureus* (new annotation)

Bacterial surface display: A, LSA250/1 library in fhuA with patient sera 1 (655); B, LSA50/6 library in lamB with patient sera 1 (484); C, LSA250/1 library in fhuA with IC sera 1 (571); E, LSA50/6 library in lamB with IC sera 2 (454); F, LSA50/6 library in lamB with patient sera P1 (1105); G, LSA50/6 library in lamB with IC sera 1 (471). Ribosome display: D, LSA250/1 library with IC sera (1686). **, prediction of antigenic sequences longer than 5 amino acids was performed with the programme ANTIGENIC (Kolkar and Tongaonkar, 1990); #, identical sequence present twice in ORF.

S. aureus antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
SaA0003	ORF2967 & ORF2963	repC	7-19, 46-57, 85-91, 110-117, 125-133, 140-149, 156-163, 198-204, 236-251, 269-275, 283-290, 318-323, 347-363	B:3, C:14; F:29	aa 9-42 aa 156-241 aa 300-314 aa 343-420	C:GSBYI53(9-42):1/1 C:GSBYG39(156-241):1/1 C:GSBYM94(343-420):26/30	394, 396
ORF0123	ORF1909 - 18 aa at N-terminus	unknown	4-10, 25-30, 38-57, 91-108, 110-123, 125-144, 146-177, 179-198, 216-224, 226-233	B:3, E:7, G:1	aa 145-163	B:GSBXF80(150-163):5/27 E:GSBZC17(150-163):25/41	409, 410
ORF0160	ORF1941 - 16 aa at N-terminus	unknown	4-26, 34-70, 72-82, 86-155, 160-166, 173-205, 207-228, 230-252, 260-268, 280-313	A:1	aa 96-172	A:GSBXO07(96-172):5/30	411, 412
ORF0657	ORF unknown	LPXTGVI protein	9-33, 56-62, 75-84, 99-105, 122-127, 163-180, 186-192, 206-228, 233-240, 254-262, 275-283, 289-296, 322-330, 348-355, 416-424, 426-438, 441-452, 484-491, 541-549, 563-569, 578-584, 624-641	A:2, B:27, F:15	aa 526-544	B:GSBXE07-bdb1(527-542):11/71 F:SALAX70(526-544):11/41	413, 414
ORF1050	ORF1307 - 4 aa at N-terminus	unknown	45-68, 72-79, 91-101, 131-142, 144-160, 179-201	A:1, H:45	aa 53-124	A:GSBXM26(53-124):7/30	415, 416
ORF1344	ORF0212 - 10 aa at N-terminus	NifS protein homolog	13-26, 40-49, 61-68, 92-112, 114-123, 138-152, 154-183, 194-200, 207-225, 229-240, 259-265, 271-284, 289-309, 319-324, 330-336, 346-352, 363-372	A:11	aa 24-84	A:GSBXXK59-bmd21(24-84):6/29	417, 418

S. aureus antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF1632	ORF1163 -4 aa at N-terminus	SdrH homolog	4-31, 50-55, 243-257, 259-268, 298-316, 326-335, 364-370, 378-407	B:6, E:11, F:34	aa 101-115 aa 115-139 aa 158-186	B:GSBXG53(164-182):39/71 F:SALAP07(101-115):11/41	419, 420
ORF2180	ORF0594 -2 aa at N-terminus	LPXTGIV protein	9-17, 24-45, 67-73, 82-90, 100-107, 117-134, 137-145, 158-168, 176-183, 188-194, 206-213, 223-231, 243-248, 263-270, 275-282, 298-304, 344-355, 371-377, 382-388, 427-433, 469-479, 500-505, 534-559, 597-607, 662-687, 790-815, 918-943, 1032-1037, 1046-1060, 1104-1112, 1128-1137, 1179-1184, 1197-1204, 1209-1214, 1221-1239	A:3, C:3, E:6, F:2, H:6	aa 491-587 aa 633-715 aa 702-757* aa 758-830 (aa 830-885)*	A:GSBXS61(491-555):1/1 A:GSBXL64(494-585):1/1 A:GSBXS92(758-841):1/1 A:bmd4(702-757):16/30* (A:bmd4(830-885):16/30)* F:SALBC43(519-533):4/41	421, 422
ORF2184	ORF0590 -8 aa at N-terminus	FnbpB	10-29, 96-116, 131-137, 146-158, 167-173, 177-182, 185-191, 195-201, 227-236, 260-266, 270-284, 291-299, 301-312, 348-356, 367-376, 382-396, 422-432, 442-453, 480-487, 497-503, 519-527, 543-548, 559-565, 579-585, 591-601, 616-623, 643-648, 657-663, 706-718, 746-758, 791-796, 810-817, 819-825, 833-839, 847-853, 868-885, 887-895, 919-932	A:2, C:4, G:9	aa 694-769 aa 774-847	A:GSBXM62(694-769):28/28 A:GSBXR22(774-847):1/1	423, 424
ORF2470	ORF0299 -14 aa at N-terminus	Conserved hypothetical protein	4-27, 36-42, 49-55, 68-73, 94-101, 131-137, 193-200, 230-235, 270-276, 294-302, 309-324, 334-344, 347-364, 396-405, 431-437, 498-508, 513-519, 526-532, 539-544, 547-561, 587-594, 618-630, 642-653, 687-699, 713-719, 752-766	C:3	aa 400-441	C:GSBYH60(400-441):28/31	425, 426
ORF2498	ORF0267 ORF app. 580 aa longer at N terminus; plus other changes	Conserved hypothetical protein	8-19, 21-44, 63-76, 86-92, 281-286, 303-322, 327-338, 344-354, 364-373, 379-394, 405-412, 453-460, 501-506, 512-518, 526-542, 560-570, 577-583, 585-604, 622-630, 645-673, 677-691, 702-715, 727-741, 748-753, 770-785, 789-796, 851-858, 863-869, 876-881, 898-913, 917-924, 979-986, 991-997, 1004-1009, 1026-1041, 1045-1052, 1107-1114, 1119-1125, 1132-1137, 1154-1169, 1173-1192, 1198-1204, 1240-1254, 1267-1274, 1290-1298, 1612-1627	D:12, F:6	aa 358-411 aa 588-606 aa 895-909	D:17/21 F:SALAT38(895-909):8/41	427, 428

S. aureus antigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of selected clones per ORF and screen	Location of identified immunogenic region	Serum reactivity with relevant region (positive/total)	Seq ID no: (DNA +Prot)
ORF2548	ORF2711 -12 aa at N-terminus	IgG binding protein A	4-37, 44-53, 65-71, 75-82, 105-112, 126-132, 136-143, 164-170, 184-190, 194-201, 222-232, 242-248, 252-259, 280-291, 300-317, 413-420, 452-460, 485-503	A:55, B:54, C:35, F:59, G:56, H:38	aa 1-123 aa 207-273 aa 310-410	A:GSBXK68(1-73):21/30 A:GSBXK41(35-123):1/1 A:GSBXN38(207-273):19/30 A:GSBXL11(310-363):10/30 B:GSBXB22(394-406):37/71 F:SALAM17(394-406):29/41	429, 430
ORF2746	ORF2507 -3 aa at N-terminus	homology with ORF1	4-9, 12-17, 40-46, 91-103, 106-113, 116-125, 150-160, 172-177, 182-188, 195-206, 241-261, 263-270, 277-285, 287-294	A:1, H:13	aa 63-126	A:GSBXO40(66-123):8/29	431, 432
ORF2797	ORF2470 -24 aa at N-terminus	unknown	13-32, 40-75, 82-95, 97-112, 115-121, 124-154, 166-192, 201-225, 227-252, 268-273, 288-297, 308-375, 379-434	B:3, E:2, F:13, H:3	aa 159-176 aa 325-339	B:GSBXE85(159-176):11/27 F:SALAQ47(159-176):8/41	433, 434
ORF2960	ORF2298 -5 aa at N-terminus	putative Exotoxin	8-31, 35-44, 106-113, 129-135, 154-159, 168-178, 203-215, 227-236, 240-249, 257-266, 275-281, 290-296, 298-305, 314-319, 327-334	C:101, E:2, H:58	aa 1-80 aa 48-121 aa 98-190	C:GSBYG32(1-80):6/7 C:GSBYG61-bhe2(48-116):26/30 C:GSBYN80(98-190):13/17	435, 436
ORF2963	ORF2295 -5 aa at N-terminus	putative Exotoxin	8-23, 35-41, 64-70, 81-87, 109-115, 121-132, 150-167, 177-188, 194-201, 208-216, 227-233, 238-248, 265-271, 279-285	C:3, E:3, G:1	aa 17-95	C:GSBYJ58(17-95):9/15	437, 438

S. <i>aureus</i> an tigenic protein	Old ORF number	Putative function (by homology)	predicted immunogenic aa**	No. of se- lected clones per ORF and screen	Location of identified immuno- genic re- gion	Serum reactivity with rele- vant region (positive/total)	Seq ID no: (DNA +Prot)
ORF3200	ORF1331 +8506 aa at N- terminus	putative extracellular matrix binding protein	8-32, 45-52, 92-103, 154-159, 162- 168, 207-214, 232-248, 274-280, 297-303, 343-349, 362-375, 425- 442, 477-487, 493-498, 505-512, 522-533, 543-550, 558-564, 568- 574, 580-600, 618-630, 647-652, 658-672, 692-705, 711-727, 765- 771, 788-798, 812-836, 847-858, 870-898, 903-910, 1005-1015, 1018-1025, 1028-1036, 1058-1069, 1075-1080, 1095-1109, 1111-1117, 1119-1133, 1166-1172, 1183-1194, 1200-1205, 1215-1222, 1248-1254, 1274-1280, 1307-1317, 1334-1340, 1381-1391, 1414-1420, 1429-1439, 1445-1467, 1478-1495, 1499-1505, 1519-1528, 1538-1550, 1557-1562, 1572-1583, 1593-1599, 1654-1662, 1668-1692, 1701-1707, 1718-1724, 1738-1746, 1757-1783, 1786-1793, 1806-1812, 1815-1829, 1838-1848, 1853-1860, 1875-1881, 1887-1893, 1899-1908, 1933-1940, 1952-1961, 1964-1970, 1977-1983, 1990-1996, 2011-2018, 2025-2038, 2086-2101, 2103-2117, 2177-2191, 2195-2213, 2220-2225, 4*2237-2249, 2273- 2279, 2298-2305, 2319-2327, 2349- 2354, 2375-2381, 2391-2398, 2426- 2433, 2436-2444, 2449-2454, 2463- 2469, 2493-2499, 2574-2589, 2593- 2599, 2605-2611, 2615-2624, 2670- 2684, 2687-2698, 2720-2727, 2734- 2754, 2762-2774, 2846-2866, 2903- 2923, 2950-2956, 2985-2998, 3011- 3031, 3057-3064, 2*3102-3117, 3137-3143, 3186-3195, 3211-3219, 3255-3270, 3290-3300, 3327-3334, 3337-3343, 3390-3396, 3412-3419, 3439-3446, 3465-3470, 3492-3500, 3504-3510, 3565-3573, 3642-3650, 3691-3698, 3766-3775, 3777-3788, 3822-3828, 3837-3847, 3859-3864, 3868-3879, 3895-3902, 3943-3951, 3963-3971, 3991-3997, 4018-4030, 4054-4060, 4074-4099, 4123-4129, 4147-4153, 4195-4201, 4250-4255, 4262-4267, 4270-4277, 4303-4310,	A:11, B:11, C:36, H:32	aa 8543- 8601 aa 8461- 8475	A:GSBXL07(8543-8601):6/28	439, 440

4321-4330, 4343-4352, 4396-4408,
4446-4451, 4471-4481, 4503-4509,
4516-4534, 4596-4604, 4638-4658,
4698-4710, 4719-4732, 4776-4783,
4825-4833, 4851-4862, 4882-4888,
4894-4909, 4937-4942, 5047-5054,
5094-5100, 5102-5112, 5120-5125,
5146-5153, 5155-5164, 5203-5214,
5226-5236, 5278-5284, 5315-5321,
5328-5342, 5348-5359, 5410-5420,
5454-5466, 5481-5489, 5522-5538,
5597-5602, 5607-5614, 0"5623-
5629, 5650-5665, 5707-5719, 5734-
5742, 5772-5778, 5785-5790, 5833-
5845, 5857-5863, 5899-5904, 5908-
5921, 5959-5971, 5981-5989, 6010-
6017, 6034-6043, 6058-6064, 6112-
6120, 6154-6169, 6210-6217, 6231-
6240, 6261-6268, 6288-6294, 6318-
6324, 6340-6349, 6358-6369, 6402-
6407, 6433-6438, 6483-6493, 6513-
6519, 6527-6546, 6561-6574, 6599-
6608, 6610-6616, 6662-6673, 6696-
6705, 6729-6743, 6769-6775, 6792-
6801, 6819-6828, 6840-6846, 6860-
6870, 6915-6928, 6966-6972, 7021-
7028, 7032-7047, 7096-7101, 7109-
7117, 7138-7149, 7157-7162, 7201-
7206, 7238-7253, 7283-7294, 7296-
7302, 7344-7365, 7367-7376, 7389-
7404, 7413-7433, 7475-7482, 7493-
7500, 7535-7549, 7596-7608, 7646-
7651, 7661-7678, 7722-7731, 7741-
7754, 7764-7769, 7776-7782, 7791-
7806, 7825-7837, 7862-7875, 7891-
7897, 7922-7931, 7974-7981, 7999-
8005, 8039-8045, 8049-8065, 8070-
8075, 8099-8112, 8119-8125, 8151-
8158, 8169-8181, 8226-8232, 8258-
8264, 8291-8299, 8301-8310, 8325-
8335, 8375-8389, 8394-8400, 8405-
8412, 8421-8436, 8478-8485, 8512-
8521, 8528-8538, 8564-8579, 8587-
8594, 8603-8615, 8626-8637, 8640-
8646, 8657-8672, 8684-8691, 8725-
8736, 8748-8761, 8777-8783, 8794-
8799, 8810-8825, 8851-8862, 8874-
8887, 8903-8912, 8914-8926, 8933-
8943, 8954-8960, 8979-8988, 9004-
9011, 9035-9041, 9056-9069, 9077-
9086, 9088-9096, 9106-9111, 9124-
9133, 9183-9191, 9224-9231, 9235-
9241, 9250-9265, 9279-9290, 9295-

		9300, 9326-9343, 9408-9414, 9422- 9427, 9435-9441, 9455-9461, 9507- 9517, 9532-9538, 9580-9589, 9594- 9600, 9614-9623, 9643-9648, 9665- 9683, 9688-9700, 9720-9726, 9742- 9758, 9767-9775, 9795-9800, 9817- 9835, 9842-9847, 9912-9919, 9925- 9938, 9943-9963, 9970-10009, 10025-10031, 10037-10043, 10045- 10063, 10066-10073, 10117-10124, 10126-10136, 10203-10210, 10218- 10225, 10232-10242, 10287-10292, 10303-10323, 10352-10360, 10385- 10396, 10425-10431, 10452-10459, 10480-10485			
--	--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--	--

Table 3. Serological proteome analysis of *S. aureus* surface proteins using human sera

a) *S. aureus*/agr "stress conditions"

Spot ID/sera	IC40 1:20,000	IC35, N26, C4 1:50,000 each	Infant pool C2,5,6,10,12 1:10,000	N22 1:10.000 IC40 1:50,000
PCK2	+	+	-	+
PCK4	+	+++	-	+++
PCK5	-	(+)	-	+
PCK6	+	+	-	+

Spot ID/sera	IC35, 40 1:50,000 N22 1:10,000	P-pool (P6,18,25,28,29) 1:50,000 each	Infant pool C2,5,6,10,12 1:10,000	
PAC1	++	++	-	
PAC2	++	+++	-	
PAC3	-	+	-	
PAC5	-	++	-	

Spot ID/sera	P-pool (P6,18,25,28,29) 1:50,000 each	Infant 14 1:10,000	IC pool / IgG (N26, IC34,35) 1:30,000 each	IC pool / IgA (N26, IC34,35) 1:30,000 each
PAC11	++	-	++	++
PAC12	++	-	++	++
PAC13	-	-	-	++
PAC14	-	-	+	+
PAC15	-	-	+++	+++
PAC16	+	-	+	+
PAC17	+	-	+	+
PAC18	++	-	-	-
PAC19	-	-	++	++
PAC20	++	-	-	-
POV31	+++	-	-	-
POV32	+	-	-	-
POV33	+	-	-	-
POV34	+	-	-	-
POV35	+	-	-	-
P OV36	+	-	-	-
P OV37	++	-	-	-

P OV38	++	-	-	-
P OV39	+++	-	-	-
P OV40	+++	-	-	-

b) *S. aureus*/COL "standard conditions"

Spot ID/sera	IC pool (N26,IC34,35) 1:30,000 each	IC35 1:20,000	P18 1:10,000	P25 1:10,000	P1 1:5,000	P29 1:2,500	Infant 18 1:10,000
POV2	+++	+++	+++	+++	+++	-	-
POV3.1	+++	+++	+++	+++	+++	-	-
POV3.2	+++	+++	+++	+++	+++	-	-
POV4	+	+++	-	-	-	-	-
POV7	-	-	+++	-	-	-	-
POV10	-	++	(+)	(+)	-	(+)	-
POV12	-	-	-	-	-	+++	-
POV13	++	+++	+++	+++	++	++	-
POV14	++	+++	+++	++	++	++	-
POV15	+	+	-	+	(+)	-	-

c) *S. aureus*/COL "stress conditions"

Spot ID/sera	P-pool (P6,18,25,28,29) 1:50,000 each	IC34+IC35 1:20,000 each	P18 1:10,000	P29 1:10,000	Infant 14 1:10,000
POV16	-	+++	-	-	-
POV17	-	+++	(+)	-	-
POV18	+	-	++	-	-
POV19	(+)	-	+++	-	-
POV21	-	-	+	-	-
POV23	-	+	-	-	-
POV24	-	+	-	-	-
POV25	+	-	-	-	-

Table 4. *S. aureus* antigens identified by MALDI-TOF-MS sequencing (ORFs in bold were also identified by bacterial surface display)
Prediction of antigenic regions in selected antigens identified by serological proteome analysis using human sera

spot ID	<i>S. aureus</i> protein (ORF no. / abbrev.)	Putative function (by homology)	Seq ID no: (DNA, Prot)	Putative localization
PCK2	ORF0599	Glycinamide-ribosyl synthase	107, 108	cytoplasmic
PCK5	ORF0484 yitU	conserved hypoth. protein (yitU)	109, 110	cytoplasmic
PCK6	ORF2309 mqo	membrane-associated malate-quinone oxidase	111, 112	peripheral membrane
POV2	ORF0766 aux1	protein phosphatase contributing to methicillin resistance	113, 114	trans-membrane
POV4, 17 PAC14, 19	ORF0078 EF-Tu	C-terminal part of 44 kDa protein similar to elongation factor Tu	115, 116	cytoplasmic/ secreted
POV5 ¹⁾	ORF0782	3-ketoacyl-acyl carrier protein reductase (fabG)	117, 118	cytoplasmic
POV7	ORF0317 SecA	protein transport across the membrane SecA	39, 91	cytoplasmic
POV10	ORF1252 yrzC	hypothetical BACSU 11.9 kd protein (upf0074 (rff2) family)	119, 120	cytoplasmic
POV12	ORF0621 pdhB	dihydrolipoamide acetyltransferase (pdhB)	121, 122	cytoplasmic
POV14	ORF0072 rpoB	DNA-directed RNA polymerase β	125, 126	cytoplasmic
POV15	ORF0077 EF-G	85 kD vitronectin binding protein	127, 128	cytoplasmic
POV18	not found YLY1	general stress protein YLY1	129, 130	cytoplasmic
POV30 ¹⁾	ORF0069 RL7	ribosomal protein L7	131, 132	cytoplasmic
POV21	ORF0103 yckG	probable hexulose-6-phosphate synthase (yckG)	133, 134	cytoplasmic
POV24	ORF0419 yurX	conserved hypothetical protein (yurX)	137, 138	cytoplasmic

- 100 -

spot ID	S. aureus protein (ORF no. / abbreviation.)	Putative function (by homology)	Seq ID no: (DNA, Prot)	Putative localization
POV25	ORF2441 gidA	glucose inhibited division protein a (gidA)	139, 140	cytoplasmic
PAC1	ORF1490 prsA	protein export protein prsA precursor (prsA)	173, 174	periplasmic
PAC2	ORF1931 ModA	periplasmic molybdate binding protein (ModA)	175, 176	surface
PAC3	ORF2053	heavy metal dependent transcriptional activator, putative regulator of multidrug resistance efflux pump pmrA	177, 178	cytoplasmic
PAC5	ORF2233 ydaP	pyruvate oxidase (ydaP)	179, 180	cytoplasmic
PAC11	ORF1361	LPXTGV, extracellular matrix-bdg.	3, 56	surface
PAC12	ORF1244 alaS	alanyl-tRNA synthetase	159, 160	cytoplasmic
PAC13	ORF0835 ymfA	RNA processing enzyme/ATP-bdg.	161, 162	cytoplasmic
PAC15	ORF1124 bfmBB	lipoamid acyltransferase component of branched-chain alpha-keto acid dehydrogenase complex	163, 164	cytoplasmic
PAC16	ORF0340 GAPDH	glyceraldehydes-3-phosphate dehydrogenase	165, 166	cytoplasmic
PAC17	not found Contig83	5'-methylthioadenosine nucleosidase / S-adenosylhomo-cysteine nucleosidase		cytoplasmic
PAC20	ORF2711	75% identity to ORF2715 similar to hypothetical proteins	167, 168	unknown
POV31	ORF0659	29 kDa surface protein	236, 238	surface
POV32	ORF0659	29 kDa surface protein	236, 238	surface
POV33	ORF0659	29 kDa surface protein	236, 238	surface
POV34	ORF0659	29 kDa surface protein	236, 238	surface
POV35	ORF0659	29 kDa surface protein	236, 238	surface
P OV36	ORF00661	LPXTG-motif cell wall anchor domain protein	235, 237	surface
P OV37	ORF0659	29 kDa surface protein	236, 238	surface

spot ID	S. aureus protein (ORF no. / abbrev.)	Putative function (by homology)	Seq ID no: (DNA, Prot)	Putative localization
P OV38	ORF0659	29 kDa surface protein	236, 238	surface
P OV39	ORF0657	LPXTG-anchored surface protein	1, 142	surface
P OV40	not identified			

Seq ID no: (Protein)	spot ID	S. aureus ORF no. / abbrev.	Putative localization	Putative antigenic surface areas (Antigenic package)
112	PCK6	ORF2309 mqo	peripheral membrane	61-75, 82-87, 97-104, 113-123, 128-133, 203-216, 224-229, 236-246, 251-258, 271- 286, 288-294, 301-310, 316-329, 337-346, 348-371, 394-406, 418-435, 440-452
114	POV2	ORF766 aux1	trans-mem- brane	30-37, 44-55, 83-91, 101-118, 121-128, 136-149, 175-183, 185-193, 206-212, 222- 229, 235-242
116	POV4	ORF078 EF-Tu	cytoplasmic/ secreted	28-38, 76-91, 102-109, 118-141, 146-153, 155-161, 165-179, 186-202, 215-221, 234- 249, 262-269, 276-282, 289-302, 306-314, 321-326, 338-345, 360-369, 385-391
176	PAC2	ORF1931 ModA	periplasmic	29-44, 74-83, 105-113, 119-125, 130-148, 155-175, 182-190, 198-211, 238-245
174	PAC1	ORF1490 prsA	periplasmic	5-24, 38-44, 100-106, 118-130, 144-154, 204-210, 218-223, 228-243, 257-264, 266- 286, 292-299
168	PAC20	ORF2711	unknown	7-14, 21-30, 34-50, 52-63, 65-72, 77-84, 109-124, 129-152, 158-163, 175-190, 193- 216, 219-234

spot ID	GI no. or TIGR no.	S. aureus protein (ORF no. / abbrev.)	Putative function (by homology)	Seq ID no: (DNA, Prot)
PCK2	TIGR1280	ORF0599	Glycinamide-ribosyl synthase	107, 108

PCK4	7672993	ORF2268 IsaA	possibly adhesion/aggregation	12, 64
PCK5	TIGR6209	ORF0484 yitU	conserved hypoth. protein (yitU)	109, 110
PCK6	TIGR6182	ORF2309	membrane-associated malate-quinone oxidase	111, 112
POV2	6434044	ORF0766 aux1	protein phosphatase contributing to methicillin resistance	113, 114
POV3.1	7672993	ORF2268 IsaA	possibly adhesion/aggregation	12, 64
POV3.2	7672993	ORF2268 IsaA	possibly adhesion/aggregation	12, 64
POV4	TIGR8079	ORF0078 EF-Tu	C-terminal part of 44 kDa protein similar to elongation factor Tu	115, 116
POV5 ¹⁾	TIGR8091	ORF0782	3-ketoacyl-acyl carrier protein reductase (fabG)	117, 118
POV7	2500720	ORF0317 SecA	protein transport across the membrane SecA	39, 91
POV10	TIGR8097	ORF1252 yzrC	hypothetical BACSU 11.9 kd protein (upf0074 (rf2) family)	119, 120
POV12	2499415	ORF0621 pdhB	dihydrolipoamide acetyltransferase (pdhB)	121, 122
POV13	7470965	ORF0094 SdrD	fibrinogen-bdg. (LPXTG) protein homolog (SdrD)	123, 124
POV14	1350849	ORF0072 rpoB	DNA-directed RNA polymerase β	125, 126
POV15	6920067	ORF0077 EF-G	85 kD vitronectin binding protein	127, 128
POV17	TIGR8079	ORF0078	C-terminal part of 44 kDa protein similar to elongation factor Tu	115, 116
POV18	3025223	not found	general stress protein YLY1	129, 130
POV30 ¹⁾	350771	ORF0069 RL7	ribosomal protein L7	131, 132
POV21		ORF0103	probable hexulose-6-phosphate synthase (yckG)	133, 134
POV23		ORF0182	lipoprotein (S.epidermis)	135, 136

¹⁾ identified from a total lysate from *S. aureus* 8325-4 spa- grown under standard conditions. Seroreactivity with 1/1 patient and 2/4 normal sera but not with infant serum (C5).

References

- Aichinger G., Karlsson L., Jackson M.R., Vestberg M., Vaughau J.H., Teyton L., Lechler R.I. and Peterson P A. Major Histocompatibility Complex classII-dependent unfolding, transport and degradation of endogenous proteins. *J. Biol. Chem.*, v.272, 1997, pp. 29127-29136
- Ausubel, F.M., Brent, R., Kingston, R.E., Moore, D.D., Seidman, J.G., Smith, J.A. and Struhl, K. Eds.(1994). *Current protocols in molecular biology*. John Wiley & Sons, Inc.
- Betley, M.J., Lofdahl, S., Kreiswirth, B.N., Bergdoll, M.S. and Novick, R.P. (1984). Staphylococcal enterotoxin A gene is associated with a variable genetic element. *Proc. Natl. Acad. Sci. U.S.A.* 81:5179-5183.
- Bruggemann M, Neuberger MS (1996) *Immunol. Today* 17:391-397
- Burnie, J.P., Matthews, R.C., Carter, T., Beaulieu, E., Donohoe, M., Chapman, C., Williamson, P. and Hodgetts, S.J. (2000). Identification of an immunodominant ABC transporter in methicillin-resistant *Staphylococcus aureus* infections. *Infect. Immun.* 68:3200-3209.
- Chen, H.Z. and Zubay, G. (1983). *Methods Enzymol.* 101:674-690.
- Coloque-Navarro, P., Söderquist, B., Holmberg, H., Blomqvist, L., Olcen, P., and Möllby, R.(1998) Antibody response in *Staphylococcus aureus* septicaemia - a prospective study. *J. Med. Microbiol.* 47, 217-25.
- Crossley, K.B. and Archer G.L., eds. (1997). *The Staphylococci in Human Disease*. Churchill Livingston Inc.
- Flock, J.-I. (1999). Extracellular-matrix-binding proteins as targets for the prevention of *Staphylococcus aureus* infections. *Molecular Medicine Today* 5:532-537.
- Forrer, P., Jung, S. and Plückthun, A. (1999). Beyond binding: using phage display to select for structure, folding and enzymatic activity in proteins. *Curr. Opin. Struct. Biol.* 9:514-520.

- Foster, T.J. and Hook, M. (1998). Surface protein adhesins of *Staphylococcus aureus*. *Trends Microbiol.* 6:484-488.
- Frénay, H. M. E., Theelen, J. P. G., Schouls, L. M., Vandenbroucke-Grauls, C. M. J. E., Vernoef, J., van Leeuwen, W. J., and Mooi, F. R. (1994). Discrimination of epidemic and nonepidemic methicillin-resistant *Staphylococcus aureus* on the basis of protein A gene polymorphism. *J. Clin. Microbiol.* 32:846-847.
- Georgiou, G., Stathopoulos, C., Daugherty, P.S., Nayak, A.R., Iverson, B.L. and Curtiss III, R. (1997). Display of heterologous proteins on the surface of microorganisms: From the screening of combinatorial libraries to live recombinant vaccines. *Nature Biotechnology* 15:29-34.
- Goh, S.-H., Byrne, S. K., Zhang, J. L., and Chow, A. W. (1992). Molecular typing of *Staphylococcus aureus* on the basis of coagulase gene polymorphisms. *J. Clin. Microbiol.* 30:1642-1645.
- Graziano et al. (1995) *J. Immunol.* 155:4996-5002
- Hammer et al. *J. Exp. Med* (1995) 181: 1847-1855
- Hanes, J. and Plückthun, A. (1997). In vitro selection and evolution of functional proteins by using ribosome display. *PNAS* 94:4937-4942.
- Hashemzadeh-Bonehi, L., Mehraein-Ghomi, F., Mitsopoulos, C., Jacob, J.P., Hennessey, E.S. and Broome-Smith, J.K. (1998). Importance of using lac rather than ara promoter vectors for modulating the levels of toxic gene products in *Escherichia coli*. *Mol. Microbiol.* 30:676-678.
- Hryniewicz, W. (1999). Epidemiology of MRSA. *Infection* 27:S13-16.
- Immeler, D., Gremm, D., Kirsch, D., Spengler, B., Presek, P., Meyer, H.E. (1998). *Electrophoresis* 19:1015-1023.
- Kajava, A.V., Zolov, S.N., Kalinin, A.E. and Nesmeyanova, M.A. (2000). The net charge of the first 18 residues of the mature sequence affects protein translocation across the cytoplasmic membrane of Gram-negative bacteria. *J. Bacteriol.* 182:2163-2169.
- Kluytmans, J., van Belkum, A. and Verbrugh, H. (1997). Nasal car-

riage of *Staphylococcus aureus*: epidemiology, underlying mechanisms, and associated risks. Clin. Microbiol. Rev. 10:505-520.

Kolaskar, A.S. and Tongaonkar, P.C. (1990). A semi-empirical method for prediction of antigenic determinants on protein antigens. FEBS Lett. 276:172-174.

Lim, Y., Shin, S.H., Jang, I.Y., Rhee, J.H. and Kim, I.S. (1998). Human transferring-binding protein of *Staphylococcus aureus* is immunogenic in vivo and has an epitope in common with human transferring receptor. FEMS Microbiol. Letters 166:225-230.

Lorenz, U., Ohlsen, K., Karch, H., Hecker, M., Thiede, A. and Hacker, J. (2000). Human antibody response during sepsis against targets expressed by methicillin resistant *Staphylococcus aureus*. FEMS Immunol. Med. Microbiol. 29:145-153.

Mamo, W., Jonsson, P. and Muller, H.P. (1995). Opsonization of *Staphylococcus aureus* with a fibronectin-binding protein antiserum induces protection in mice. Microb. Pathog. 19:49-55

McGuinness BT et al. (1996) Nature Biotech. 14:1149

Modun, B., Evans, R.W., Joannou, C.L. and Williams, P. (1998). Receptor-mediated recognition and uptake of iron from human transferrin by *Staphylococcus aureus* and *Staphylococcus epidermidis*. Infect. Immun. 66:3591-3596.

Nilsson, I., Patti, J.M., Bremell, T., Höök, M. and Tarkowski, A. (1998). Vaccination with a Recombinant Fragment of Collagen Adhesin provides Protection against *Staphylococcus aureus*-mediated Septic Death. J. Clin. Invest. 101:2640-2649.

Parker, K. C., M. A. Bednarek, and J. E. Coligan (1994) Scheme for ranking potential HLA-A2 binding peptides based on independent binding of individual peptide side-chains. J. Immunol. 152:163.

Pasquali, C., Fialka, I. & Huber, L.A. (1997). Electrophoresis 18:2573-2581.

Phillips-Quagliata, J.M., Patel, S., Han, J.K., Arakelov, S., Rao, T.D., Shulman, M.J., Fazel, S., Corley, R.B., Everett, M., Klein, M.H., Underdown, B.J. and Cortes, B. (2000). The IgA/IgM

- 106 -

receptor expressed on a murine B cell lymphoma is poly-Ig receptor. J. Immunol. 165:2544-2555

Rammensee, Hans-Georg, Jutta Bachmann, Niels Nikolaus Emmerich, Oskar Alexander Bachor, Stefan Stevanovic (1999) SYFPEITHI: database for MHC ligands and peptide motifs. Immunogenetics 50: 213-219

Recsei P., Kreiswirth, B., O'Reilly, M., Schlievert, P., Gruss, A. and Novick, R.P. (1986). Regulation of exoprotein gene expression in *Staphylococcus aureus* by agr. Mol. Gen. Genet. 202:58-61.

Rodi, D.J. and Makowski, L. (1999). Phage-display technology--finding a needle in a vast molecular haystack. Curr. Opin. Biotechnol. 10:87-93.

Schaffitzel et al., Ribosome display: an in vitro method for selection and evolution of antibodies from libraries; Journal of Immunological Methods 231, 119-135 (1999).

Sanchez-Campillo, M., Bini, L., Comanducci, M., Raggiaschi, R., Marzocchi, B., Pallini, V. and Ratti, G. (1999). Electrophoresis 20:2269-2279.

Schmitt A, Keilholz U, Thiel E, Scheibenbogen C. (2000) Quantification of tumor-specific T lymphocytes with the ELISPOT assay. J Immunother 23(3):289-95

Sester M, Sester U, Kohler H, Schneider T, Deml L, Wagner R, Mueller-Lantzsch N, Pees HW, Meyerhans A. (2000) Rapid whole blood analysis of virus-specific CD4 and CD8 T cell responses in persistent HIV infection. AIDS 14(17):2653-60.

Shafer, W.M. and Iandolo, J.J. (1979). Genetics of staphylococcal enterotoxin B in methicillin-resistant isolates of *Staphylococcus aureus*. Infect. Immun. 25:902-911.

Shibuya, A., Sakamoto, N., Shimizu, Y., Shibuya, K., Osawa, M., Hiroshima, T., Eyre, H.J., Sutherland, G.R., Endo, Y., Fujita, T., Miyabayashi, T., Sakano, S., Tsuji, T., Nakayama, E., Phillips, J.H., Lanier, L.L. and Nakauchi, H. (2000). Fc γ receptor mediates endocytosis of IgM-coated microbes. Nature Immunology 1:441-446.)

- Skerra, A. (1994). Use of the tetracycline promoter for the tightly regulated production of a murine antibody fragment in *Escherichia coli*. *Gene* 151:131-135.
- Sohail, M. (1998). A simple and rapid method for preparing genomic DNA from Gram-positive bacteria. *Mol. Biotech.* 10:191-193.
- Sonderstrup G, Cope AP, Patel S, Congia M, Hain N, Hall FC, Parry SL, Fugger LH, Michie S, McDevitt HO (1999) HLA class II transgenic mice: models of the human CD4+ T-cell immune response. *Immunol Rev* 172:335-43
- Sturniolo, T. et al., E Bono, J Ding, L Raddrizzani, O. Tuereci, U Sahin, M Braxenthaler, F Gallazzi, MP Protti, F Sinigaglia, and J Hammer (1999) Generation of tissue-specific and promiscuous HLA ligand databases using DNA chips and virtual HLA class II matrices. *Nature Biotechnology* 17: 555-562.
- Valli et al. *J. Clin. Invest.* (1993) 91: 616-62
- VandenBergh M. F. Q., Yzerman E. P. F., van Belkum, A., Boelens, H. A. M., Sijmons, M., and Verbrugh, H. A. (1999). Follow-up of *Staphylococcus aureus* nasal carriage after 8 years: redining the persistent carrier state. *J. Clin. Microbiol.* 37:3133-3140..
- Wessel, D. and Fluegge, U.I. (1984). *Anal. Biochem.* 138:141-143.

C l a i m s :

1. Method for identification, isolation and production of hyperimmune serum-reactive antigens from a pathogen, a tumor, an allergen or a tissue or host prone to auto-immunity, said antigens being suited for use in a vaccine for a given type of animal or for humans, characterized by the following steps:

- ♦providing an antibody preparation from a plasma pool of said given type of animal or from a human plasma pool or individual sera with antibodies against said specific pathogen, tumor, allergen or tissue or host prone to auto-immunity,
- ♦providing at least one expression library of said specific pathogen, tumor, allergen or tissue or host prone to auto-immunity
- ♦screening said at least one expression library with said antibody preparation,
- ♦identifying antigens which bind in said screening to antibodies in said antibody preparation,
- ♦screening the identified antigens with individual antibody preparations from individual sera from individuals with antibodies against said specific pathogen, tumor, allergen or tissue or host prone to auto-immunity,
- ♦identifying the hyperimmune serum-reactive antigen portion of said identified antigens and which hyperimmune serum-reactive antigens bind to a relevant portion of said individual antibody preparations from said individual sera and
- ♦optionally isolating said hyperimmune serum-reactive antigens and producing said hyperimmune serum-reactive antigens by chemical or recombinant methods.

2. Method for identification, isolation and production of a practically complete set of hyperimmune serum-reactive antigens of a specific pathogen, said antigens being suited for use in a vaccine for a given type of animal or for humans, characterized by the following steps:

- ♦providing an antibody preparation from a plasma pool of said given type of animal or from a human plasma pool or individual sera with antibodies against said specific pathogen,
- ♦providing at least three different expression libraries of said specific pathogen,

- ♦screening said at least three different expression libraries with said antibody preparation,
- ♦identifying antigens which bind in at least one of said at least three screenings to antibodies in said antibody preparation,
- ♦screening the identified antigens with individual antibody preparations from individual sera from individuals with antibodies against said specific pathogen,
- ♦identifying the hyperimmune serum-reactive antigen portion of said identified antigens which hyperimmune serum-reactive antigens bind to a relevant portion of said individual antibody preparations from said individual sera,
- ♦repeating said screening and identification steps at least once,
- ♦comparing the hyperimmune serum-reactive antigens identified in the repeated screening and identification steps with the hyperimmune serum-reactive antigens identified in the initial screening and identification steps,
- ♦further repeating said screening and identification steps, if at least 5% of the hyperimmune serum-reactive antigens have been identified in the repeated screening and identification steps only, until less than 5 % of the hyperimmune serum-reactive antigens are identified in a further repeating step only to obtain a complete set of hyperimmune serum-reactive antigens of a specific pathogen and
- ♦optionally isolating said hyperimmune serum-reactive antigens and producing said hyperimmune serum-reactive antigens by chemical or recombinant methods.

3. Method according to claim 1 or 2 characterized in that at least one of said expression libraries is selected from a ribosomal display library, a bacterial surface library and a proteome.
4. Method according to claim 2 characterized in that said at least three different expression libraries are at least a ribosomal display library, a bacterial surface library and a proteome.
5. Method according to any one of claims 1 to 4, characterized

in that said plasma pool is a human plasma pool taken from individuals having experienced or are experiencing an infection with said pathogen.

6. Method according to any one of claims 1 to 5, characterized in that said expression libraries are genomic expression libraries of said pathogen.

7. Method according to any one of claims 1 to 6, characterized in that said expression libraries are complete genomic expression libraries, preferably with a redundancy of at least 2x, more preferred at least 5x, especially at least 10x.

8. Method according to any one of claims 1 to 7, characterized in that it comprises the steps of screening at least a ribosomal display library, a bacterial surface display library and a proteome with said antibody preparation and identifying antigens which bind in at least two, preferably which bind to all, of said screenings to antibodies in said antibody preparation.

9. Method according to any one of claims 1 to 8, characterized in that said pathogen is selected from the group of bacterial, viral, fungal and protozoan pathogens. []

10. Method according to any one of claims 1 to 9, characterized in that said pathogen is selected from the group of human immunodeficiency virus, hepatitis A virus, hepatitis B virus, hepatitis C virus, Rous sarcoma virus, Epstein-Barr virus, influenza virus, rotavirus, Staphylococcus aureus, Staphylococcus epidermidis, Chlamydia pneumoniae, Chlamydia trachomatis, Mycobacterium tuberculosis, Mycobacterium leprae, Streptococcus pneumoniae, Streptococcus pyogenes, Streptococcus agalactiae, Enterococcus faecalis, Bacillus anthracis, Vibrio cholerae, Borrelia burgdorferi, Plasmodium sp., Aspergillus sp. or Candida albicans.

11. Method according to any one of claims 1 to 10, characterized in that at least one of said expression libraries is a ribosomal display library or a bacterial surface display library and said hyperimmune serum-reactive antigens are produced by expression of the coding sequences of said hyperimmune serum-reactive antigens

contained in said library.

12. Method according to any one of claims 1 to 11, characterized in that said produced hyperimmune serum-reactive antigens are finished to a pharmaceutical preparation, optionally by addition of a pharmaceutically acceptable carrier and/or excipient.

13. Method according to claim 12, characterized in that said pharmaceutical preparation is a vaccine.

14. Method according to claim 12 or 13, characterized in that said pharmaceutically acceptable carrier and/or excipient is an immunostimulatory compound.

15. Method according to claim 14, characterized in that said immunostimulatory compound is selected from the group of polycationic substances, especially polycationic peptides, immunostimulatory deoxynucleotides, alumn, Freund's complete adjuvans, Freund's incomplete adjuvans, neuroactive compounds, especially human growth hormone, or combinations thereof.

16. Method according to any one of claims 1 to 15, characterized in that said individual antibody preparations are derived from patients with acute infection with said pathogen, especially from patients with an antibody titer to said pathogen being higher than 80%, preferably higher than 90%, especially higher than 95% of human patient or carrier sera tested.

17. Method according to any one of claims 1 to 16, characterized in that at least 10, preferably at least 30, especially at least 50, individual antibody preparations are used in identifying said hyperimmune serum-reactive antigens.

18. Method according to any one of said claims 1 to 17, characterized in that said relevant portion of said individual antibody preparations from said individual sera are at least 10, preferably at least 30, especially at least 50 individual antibody preparations, and/or at least 20 %, preferably at least 30 %, especially at least 40 %, of all individual antibody preparations used in said screening.

19. Method according to any one of claims 1 to 18, characterized in that said individual sera are selected by having an IgA titer against a lysate, cell wall components or recombinant proteins of said pathogen being above 4000 U, especially above 6000 U, and/or by having an IgG titer being above 10000 U, preferably above 12000 U.

20. Method according to any one of claims 1 to 19, characterized in that said pathogen is a *Staphylococcus* pathogen, especially *Staphylococcus aureus*. and/or *Staphylococcus epidermidis*.

21. A hyperimmune serum-reactive antigen selected from the group consisting of the sequences listed in any one of Tables 2a, 2b, 2c, 2d, 3, 4 and 5, especially selected from the group consisting of Seq.ID No. 56, 57, 59, 60, 67, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 85, 87, 88, 89, 90, 92, 95, 96, 97, 99, 100, 101, 102, 103, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 126, 128, 130, 132, 134, 138, 140, 142, 151, 152, 154, 155 and hyperimmune fragments thereof.

22. A hyperimmune serum-reactive antigen obtainable by a method according to any one of claims 1 to 20 and being selected from the group consisting of the sequences listed in any one of Tables 2a, 2b, 2c, 2d, 3, 4 and 5, especially selected from the group consisting of Seq.ID No. 56, 57, 59, 60, 67, 70, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 85, 87, 88, 89, 90, 92, 95, 96, 97, 99, 100, 101, 102, 103, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 126, 128, 130, 132, 134, 138, 140, 142, 151, 152, 154, 155 and hyperimmune fragments thereof.

23. Use of a hyperimmune serum-reactive antigen selected from the group consisting of the sequences listed in any one of Tables 2a, 2b, 2c, 2d, 3, 4 and 5, especially selected from the group consisting of Seq.ID No. 55, 56, 57, 58, 59, 60, 62, 66, 67, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 87, 88, 89, 90, 92, 94, 95, 96, 97, 99, 100, 101, 102, 103, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 126, 128, 130, 132, 134, 138, 140, 142, 151, 152, 154, 155, 158 and hyperimmune fragments thereof for the manufacture of a pharmaceutical preparation, es-

pecially for the manufacture of a vaccine against staphylococcal infections or colonization in particular against *Staphylococcus aureus* or *Staphylococcus epidermidis*.

24. Hyperimmune fragment of a hyperimmune serum-reactive antigen selected from the group consisting of peptides comprising the amino acid sequences of column "predicted immunogenic aa", "Location of identified immunogenic region" and "Serum reactivity with relevant region" of Tables 2a, 2b, 2c and 2d and the amino acid sequences of column "Putative antigenic surface areas" of Table 4 and 5, especially peptides comprising amino acid No. aa 12-29, 34-40, 63-71, 101-110, 114-122, 130-138, 140-195, 197-209, 215-229, 239-253, 255-274 and 39-94 of Seq.ID No. 55, aa 5-39, 111-117, 125-132, 134-141, 167-191, 196-202, 214-232, 236-241, 244-249, 292-297, 319-328, 336-341, 365-380, 385-391, 407-416, 420-429, 435-441, 452-461, 477-488, 491-498, 518-532, 545-556, 569-576, 581-587, 595-602, 604-609, 617-640, 643-651, 702-715, 723-731, 786-793, 805-811, 826-839, 874-889, 37-49, 63-77 and 274-334, of Seq.ID No. 56, aa 28-55, 82-100, 105-111, 125-131, 137-143, 1-49, of Seq.ID No. 57, aa 33-43, 45-51, 57-63, 65-72, 80-96, 99-110, 123-129, 161-171, 173-179, 185-191, 193-200, 208-224, 227-246, 252-258, 294-308, 321-329, 344-352, 691-707, 358-411 and 588-606, of Seq.ID No. 58, aa 16-38, 71-77, 87-94, 105-112, 124-144, 158-164, 169-177, 180-186, 194-204, 221-228, 236-245, 250-267, 336-343, 363-378, 385-394, 406-412, 423-440, 443-449, 401-494, of Seq.ID No. 59, aa 18-23, 42-55, 69-77, 85-98, 129-136, 182-188, 214-220, 229-235, 242-248, 251-258, 281-292, 309-316, 333-343, 348-354, 361-367, 393-407, 441-447, 481-488, 493-505, 510-515, 517-527, 530-535, 540-549, 564-583, 593-599, 608-621, 636-645, 656-670, 674-687, 697-708, 726-734, 755-760, 765-772, 785-792, 798-815, 819-824, 826-838, 846-852, 889-904, 907-913, 932-939, 956-964, 982-1000, 1008-1015, 1017-1024, 1028-1034, 1059-1065, 1078-1084, 1122-1129, 1134-1143, 1180-1186, 1188-1194, 1205-1215, 1224-1230, 1276-1283, 1333-1339, 1377-1382, 1415-1421, 1448-1459, 1467-1472, 1537-1545, 1556-1566, 1647-1654, 1666-1675, 1683-1689, 1722-1737, 1740-1754, 1756-1762, 1764-1773, 1775-1783, 1800-1809, 1811-1819, 1839-1851, 1859-1866, 1876-1882, 1930-1939, 1947-1954, 1978-1985, 1999-2007, 2015-2029, 2080-2086, 2094-2100, 2112-2118, 2196-2205,

- 114 -

2232-2243, 198-258, 646-727 and 2104-2206, of Seq.ID No. 60,
aa 10-29, 46-56, 63-74, 83-105, 107-114, 138-145, 170-184, 186-
193, 216-221, 242-248, 277-289, 303-311, 346-360, 379-389, 422-
428, 446-453, 459-469, 479-489, 496-501, 83-156, of Seq.ID No.
62,
aa 14-22, 32-40, 52-58, 61-77, 81-93, 111-117, 124-138, 151-190,
193-214, 224-244, 253-277, 287-295, 307-324, 326-332, 348-355,
357-362, 384-394, 397-434, 437-460, 489-496, 503-510, 516-522,
528-539, 541-547, 552-558, 563-573, 589-595, 602-624, 626-632,
651-667, 673-689, 694-706, 712-739, 756-790, 403-462, of Seq.ID
No. 66,
aa 49-56, 62-68, 83-89, 92-98, 109-115, 124-131, 142-159, 161-
167, 169-175, 177-188, 196-224, 230-243, 246-252, 34-46, of
Seq.ID No. 67,
aa 11-20, 26-47, 69-75, 84-92, 102-109, 119-136, 139-147, 160-
170, 178-185, 190-196, 208-215, 225-233, 245-250, 265-272, 277-
284, 300-306, 346-357, 373-379, 384-390, 429-435, 471-481, 502-
507, 536-561, 663-688, 791-816, 905-910, 919-933, 977-985, 1001-
1010, 1052-1057, 1070-1077, 1082-1087, 1094-1112, 493-587, 633-
715 and 704-760, of Seq.ID No. 70, ☐
aa.6-20, 53-63, 83-90, 135-146, 195-208, 244-259, 263-314, 319-
327, 337-349, 353-362, 365-374, 380-390, 397-405, 407-415, 208-
287 and 286-314, of Seq.ID No. 71,
aa 10-26, 31-43, 46-58, 61-66, 69-79, 85-92, 100-115, 120-126,
128-135, 149-155, 167-173, 178-187, 189-196, 202-222, 225-231,
233-240, 245-251, 257-263, 271-292, 314-322, 325-334, 339-345,
59-74, of Seq.ID No. 72,
aa 4-9, 15-26, 65-76, 108-115, 119-128, 144-153, 38-52 and 66-
114, of Seq.ID No. 73,
aa 5-22, 42-50, 74-81, 139-145, 167-178, 220-230, 246-253, 255-
264, 137-237 and 250-267, of Seq.ID No. 74,
aa 10-26, 31-44, 60-66, 99-104, 146-153, 163-169, 197-205, 216-
223, 226-238, 241-258, 271-280, 295-315, 346-351, 371-385, 396-
407, 440-446, 452-457, 460-466, 492-510, 537-543, 546-551, 565-
582, 590-595, 635-650, 672-678, 686-701, 705-712, 714-721, 725-
731, 762-768, 800-805, 672-727, of Seq.ID No. 75,
aa 5-32, 35-48, 55-76, of Seq.ID No. 76,
aa 7-35, 54-59, 247-261, 263-272, 302-320, 330-339, 368-374, 382-
411, 126-143 and 168-186, of Seq.ID No. 77,
aa 5-24, 88-94, 102-113, 132-143, 163-173, 216-224, 254-269, 273-

278, 305-313, 321-327, 334-341, 31-61 and 58-74, of Seq.ID No. 78,

aa 16-24, 32-39, 43-49, 64-71, 93-99, 126-141, 144-156, 210-218, 226-233, 265-273, 276-284, 158-220, of Seq.ID No. 79,

aa 49-72, 76-83, 95-105, 135-146, 148-164, 183-205, 57-128, of Seq.ID No. 80,

aa 6-15, 22-32, 58-73, 82-88, 97-109, 120-131, 134-140, 151-163, 179-185, 219-230, 242-255, 271-277, 288-293, 305-319, 345-356, 368-381, 397-406, 408-420, 427-437, 448-454, 473-482, 498-505, 529-535, 550-563, 573-580, 582-590, 600-605, 618-627, 677-685, 718-725, 729-735, 744-759, 773-784, 789-794, 820-837, 902-908, 916-921, 929-935, 949-955, 1001-1008, 1026-1032, 1074-1083, 1088-1094, 1108-1117, 1137-1142, 1159-1177, 1183-1194, 1214-1220, 1236-1252, 1261-1269, 1289-1294, 1311-1329, 1336-1341, 1406-1413, 1419-1432, 1437-1457, 1464-1503, 1519-1525, 1531-1537, 1539-1557, 1560-1567, 1611-1618, 1620-1629, 1697-1704, 1712-1719, 1726-1736, 1781-1786, 1797-1817, 1848-1854, 1879-1890, 1919-1925, 1946-1953, 1974-1979, 5 to 134, of Seq.ID No. 81,

aa 6-33, 40-46, 51-59, 61-77, 84-104, 112-118, 124-187, 194-248, 252-296, 308-325, 327-361, 367-393, 396-437, 452-479, 484-520, 535-545, 558-574, 582-614, 627-633, 656-663, 671-678, 698-704, 713-722, 725-742, 744-755, 770-784, 786-800, 816-822, 827-837, 483-511, of Seq.ID No. 82,

aa 4-19, 57-70, 79-88, 126-132, 144-159, 161-167, 180-198, 200-212, 233-240, 248-255, 276-286, 298-304, 309-323, 332-346, 357-366, 374-391, 394-406, 450-456, 466-473, 479-487, 498-505, 507-519, 521-530, 532-540, 555-565, 571-581, 600-611, 619-625, 634-642, 650-656, 658-665, 676-682, 690-699, 724-733, 740-771, 774-784, 791-797, 808-815, 821-828, 832-838, 876-881, 893-906, 922-929, 938-943, 948-953, 969-976, 1002-1008, 1015-1035, 1056-1069, 1105-1116, 1124-1135, 1144-1151, 1173-1181, 1186-1191, 1206-1215, 1225-1230, 1235-1242, 6-66, 65-124 and 590-604, of Seq.ID No. 83,

aa 5-32, 66-72, 87-98, 104-112, 116-124, 128-137, 162-168, 174-183, 248-254, 261-266, 289-303, 312-331, 174-249, of Seq.ID No. 84,

aa 4-21, 28-40, 45-52, 59-71, 92-107, 123-137, 159-174, 190-202, 220-229, 232-241, 282-296, 302-308, 312-331, 21-118, of Seq.ID No. 85,

aa 9-28, 43-48, 56-75, 109-126, 128-141, 143-162, 164-195, 197-216, 234-242, 244-251, 168-181, of Seq.ID No. 87,

- 116 -

aa 4-10, 20-42, 50-86, 88-98, 102-171, 176-182, 189-221, 223-244, 246-268, 276-284, 296-329, 112-188, of Seq.ID No. 88,
aa 4-9, 13-24, 26-34, 37-43, 45-51, 59-73, 90-96, 99-113, 160-173, 178-184, 218-228, 233-238, 255-262, 45-105, 103-166 and 66-153, of Seq.ID No. 89, ☐
aa 13-27, 42-63, 107-191, 198-215, 218-225, 233-250, 474-367, of Seq.ID No. 90,
aa 26-53, 95-123, 164-176, 189-199, 8-48, of Seq.ID No. 92,
aa 7-13, 15-23, 26-33, 68-81, 84-90, 106-117, 129-137, 140-159, 165-172, 177-230, 234-240, 258-278, 295-319, 22-56, 23-99, 97-115, 233-250 and 245-265, of Seq.ID No. 94,
aa 13-36, 40-49, 111-118, 134-140, 159-164, 173-183, 208-220, 232-241, 245-254, 262-271, 280-286, 295-301, 303-310, 319-324, 332-339, 1-85, 54-121 and 103-185, of Seq.ID No. 95,
aa 39-44, 46-80, 92-98, 105-113, 118-123, 133-165, 176-208, 226-238, 240-255, 279-285, 298-330, 338-345, 350-357, 365-372, 397-402, 409-415, 465-473, 488-515, 517-535, 542-550, 554-590, 593-601, 603-620, 627-653, 660-665, 674-687, 698-718, 726-739, 386-402, of Seq.ID No. 96,
aa 5-32, 34-49, 1-43, of Seq.ID No. 97, ☐
aa 10-27, 37-56, 64-99, 106-119, 121-136, 139-145, 148-178, 190-216, 225-249, 251-276, 292-297, 312-321, 332-399, 403-458, 183-200, of Seq.ID No. 99,
aa 5-12, 15-20, 43-49, 94-106, 110-116, 119-128, 153-163, 175-180, 185-191, 198-209, 244-252, 254-264, 266-273, 280-288, 290-297, 63-126, of Seq.ID No. 100,
aa 5-44, 47-55, 62-68, 70-78, 93-100, 128-151, 166-171, 176-308, 1-59, of Seq.ID No. 101,
aa 18-28, 36-49, 56-62, 67-84, 86-95, 102-153, 180-195, 198-218, 254-280, 284-296, 301-325, 327-348, 353-390, 397-402, 407-414, 431-455, 328-394, of Seq.ID No. 102,
aa 7-37, 56-71, 74-150, 155-162, 183-203, 211-222, 224-234, 242-272, 77-128, of Seq.ID No. 103,
aa 34-58, 63-69, 74-86, 92-101, 130-138, 142-150, 158-191, 199-207, 210-221, 234-249, 252-271, 5-48, of Seq.ID No. 104,
aa 12-36, 43-50, 58-65, 73-78, 80-87, 108-139, 147-153, 159-172, 190-203, 211-216, 224-232, 234-246, 256-261, 273-279, 286-293, 299-306, 340-346, 354-366, 167-181, of Seq.ID No. 106,
aa 61-75, 82-87, 97-104, 113-123, 128-133, 203-216, 224-229, 236-246, 251-258, 271-286, 288-294, 301-310, 316-329, 337-346,

348-371, 394-406, 418-435, 440-452 of Seq.ID No. 112,
aa 30-37, 44-55, 83-91, 101-118, 121-128, 136-149, 175-183, 185-193, 206-212, 222-229, 235-242 of Seq.ID No. 114,
aa 28-38, 76-91, 102-109, 118-141, 146-153, 155-161, 165-179, 186-202, 215-221, 234-249, 262-269, 276-282, 289-302, 306-314, 321-326, 338-345, 360-369, 385-391 of Seq.ID No. 116,
aa 9-33, 56-62, 75-84, 99-105, 122-127, 163-180, 186-192, 206-228, 233-240, 254-262, 275-283, 289-296, 322-330, 348-355, 416-424, 426-438, 441-452, 484-491, 522-528, 541-549, 563-569, 578-584, 624-641, 527-544, of Seq.ID No. 142,
aa 37-42, 57-62, 121-135, 139-145, 183-190, 204-212, 220-227, 242-248, 278-288, 295-30, 304-309, 335-341, 396-404, 412-433, 443-449, 497-503, 505-513, 539-545, 552-558, 601-617, 629-649, 702-711, 736-745, 793-804, 814-829, 843-858, 864-885, 889-895, 905-913, 919-929, 937-943, 957-965, 970-986, 990-1030, 1038-1049, 1063-1072, 1080-1091, 1093-1116, 1126-1136, 1145-1157, 1163-1171, 1177-1183, 1189-1196, 1211-1218, 1225-1235, 1242-1256, 1261-1269, 624-684, of Seq.ID No. 151,
aa 8-23, 31-38, 42-49, 61-77, 83-90, 99-108, 110-119, 140-147, 149-155, 159-171, 180-185, 189-209, 228-234, 245-262, 264-275, 280-302, 304-330, 343-360, 391-409, 432-437, 454-463, 467-474, 478-485, 515-528, 532-539, 553-567, 569-581, 586-592, 605-612, 627-635, 639-656, 671-682, 700-714, 731-747, 754-770, 775-791, 797-834, 838-848, 872-891, 927-933, 935-942, 948-968, 976-986, 1000-1007, 1029-1037, 630-700, of Seq.ID No. 152,
aa 17-25, 27-55, 84-90, 95-101, 115-121, 55-101, of Seq.ID No. 154,
aa 13-28, 40-46, 69-75, 86-92, 114-120, 126-137, 155-172, 182-193, 199-206, 213-221, 232-238, 243-253, 270-276, 284-290, 22-100, of Seq.ID No. 155 and
aa 7-19, 46-57, 85-91, 110-117, 125-133, 140-149, 156-163, 198-204, 236-251, 269-275, 283-290, 318-323, 347-363, 9-42 and 158-174, of Seq.ID No. 158,
aa 7-14, 21-30, 34-50, 52-63, 65-72, 77-84, 109-124, 129-152, 158-163, 175-190, 193-216, 219-234 of Seq.ID.No. 168,
aa 5-24, 38-44, 100-106, 118-130, 144-154, 204-210, 218-223, 228-243, 257-264, 266-286, 292-299 of Seq.ID.No. 174,
aa 29-44, 74-83, 105-113, 119-125, 130-148, 155-175, 182-190, 198-211, 238-245 of Seq.ID.No. 176, and fragments as depicted in Tables 2 and 4 and fragments comprising at least 6, preferably

- 118 -

more than 8, especially more than 10 aa of said sequences.

25. Helper epitopes of an antigen or a fragment, as defined in anyone of claims 21 to 24, especially peptides comprising fragments selected from the peptides mentioned in column "Putative antigenic surface areas" in Table 4 and 5 and from the group aa 6-40, 583-598, 620-646 and 871-896 of Seq.ID.No.56, aa 24-53 of Seq.ID.No.70, aa 240-260 of Seq.ID.No.74, aa 1660-1682 and 1746-1790 of Seq.ID.No. 81, aa 1-29, 680-709, and 878-902 of Seq.ID.No. 83, aa 96-136 of Seq.ID.No. 89, aa 1-29, 226-269 and 275-326 of Seq.ID.No. 94, aa 23-47 and 107-156 of Seq.ID.No. 114 and aa 24-53 of Seq.ID.No. 142 and fragments thereof being T-cell epitopes.

26. Vaccine comprising a hyperimmune serum-reactive antigen or a fragment thereof, as defined in any one of claims 21 to 25.

27. Vaccine according to claim 25, characterized in that it further comprises an immunostimulatory substance, preferably selected from the group comprising polycationic polymers, especially polycationic peptides, immunostimulatory deoxynucleotides (ODNs), neuroactive compounds, especially human growth hormone, alum, Freund's complete or incomplete adjuvans or combinations thereof.

28. Preparation comprising antibodies against at least one antigen or a fragment thereof, as defined in any one of claims 21 to 25.

29. Preparation according to claim 27, characterized in that said antibodies are monoclonal antibodies.

30. Method for producing a preparation according to claim 28, characterized by the following steps:

- initiating an immune response in a non human animal by administering an antigen or a fragment thereof, as defined in any one of the claims 21 to 25, to said animal,
- removing the spleen or spleen cells from said animal,
- producing hybridoma cells of said spleen or spleen cells,
- selecting and cloning hybridoma cells specific for said anti-

- 119 -

gen and

•producing the antibody preparation by cultivation of said cloned hybridoma cells and optionally further purification steps.

31. Method according to claim 29, characterized in that said removing the spleen or spleen cells is connected with killing said animal.

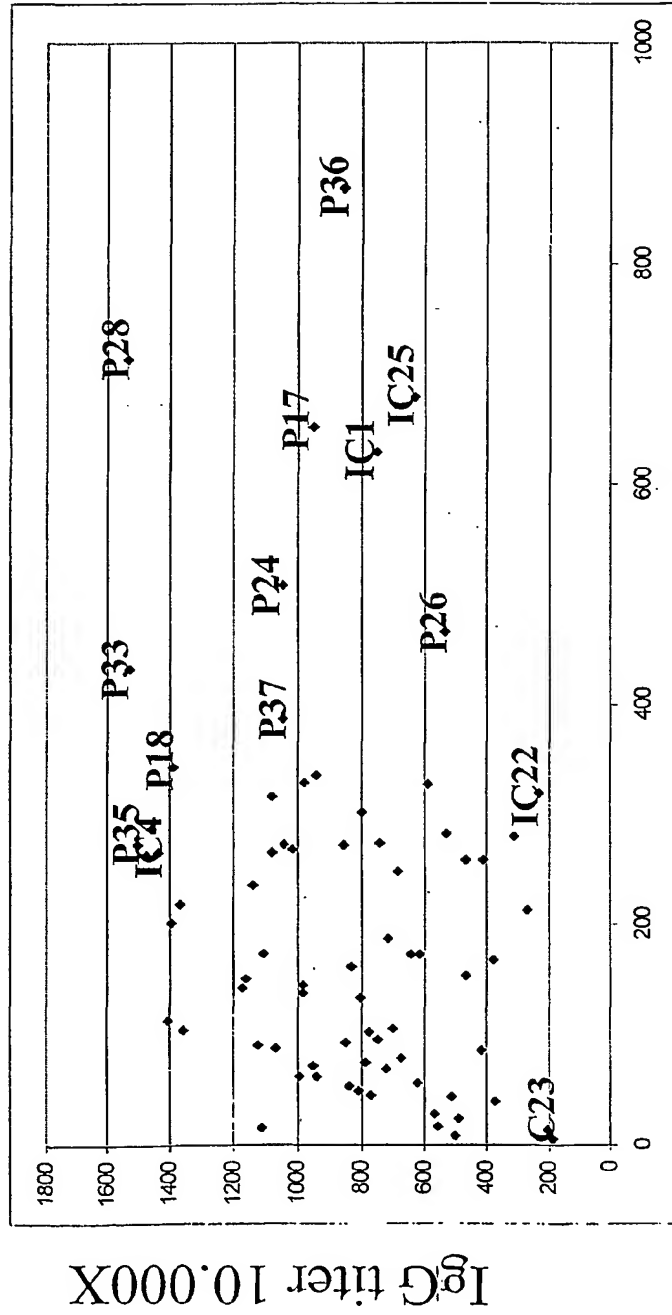
32. Method for producing a preparation according to claim 27, characterized by the following steps:

- initiating an immune response in a non human animal by administering an antigen or a fragment thereof, as defined in any one of the claims 21 to 25, to said animal,
- removing an antibody containing body fluid from said animal,
- and
- producing the antibody preparation by subjecting said antibody containing body fluid to further purification steps.

33. Use of a preparation according to claim 27 or 28 for the manufacture of a medicament for treating or preventing staphylococcal infections or colonization in particular against *Staphylococcus aureus* or *Staphylococcus epidermidis*.

34. A screening method assessing the consequences of functional inhibition of at least one antigen or a fragment thereof, as defined in any one of claims 21 to 25.

IgA vs. IgG titer against total *S. aureus* lysate



IgA titer 10.000X

Figure 1

2/11

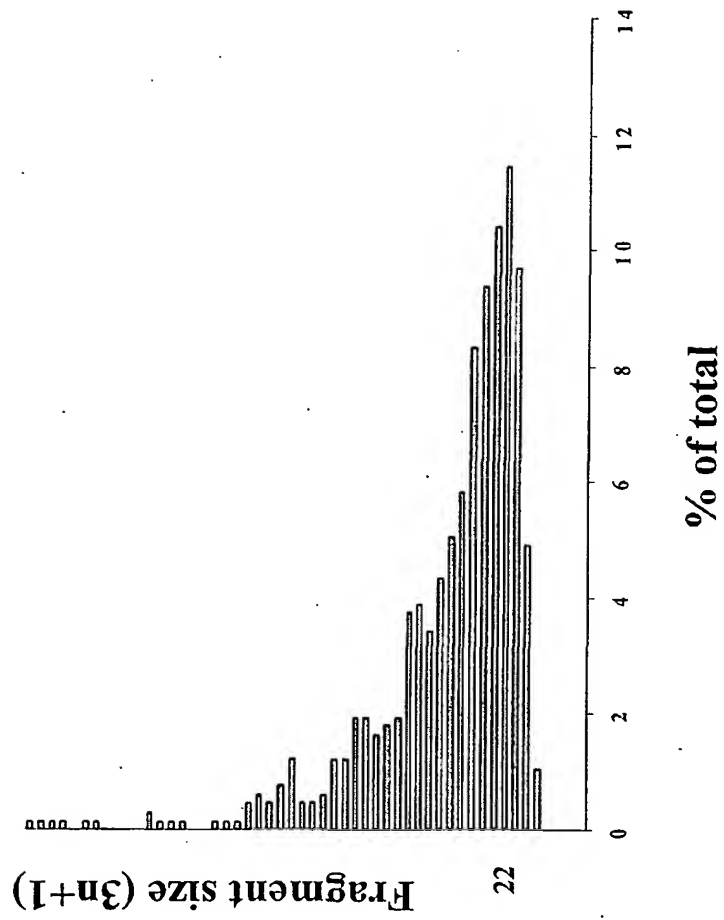


Figure 2

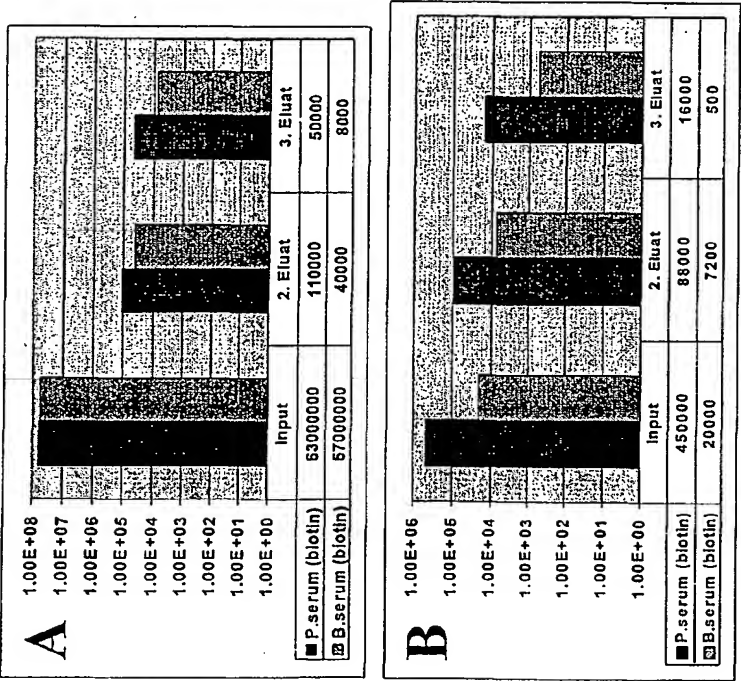


Figure 3

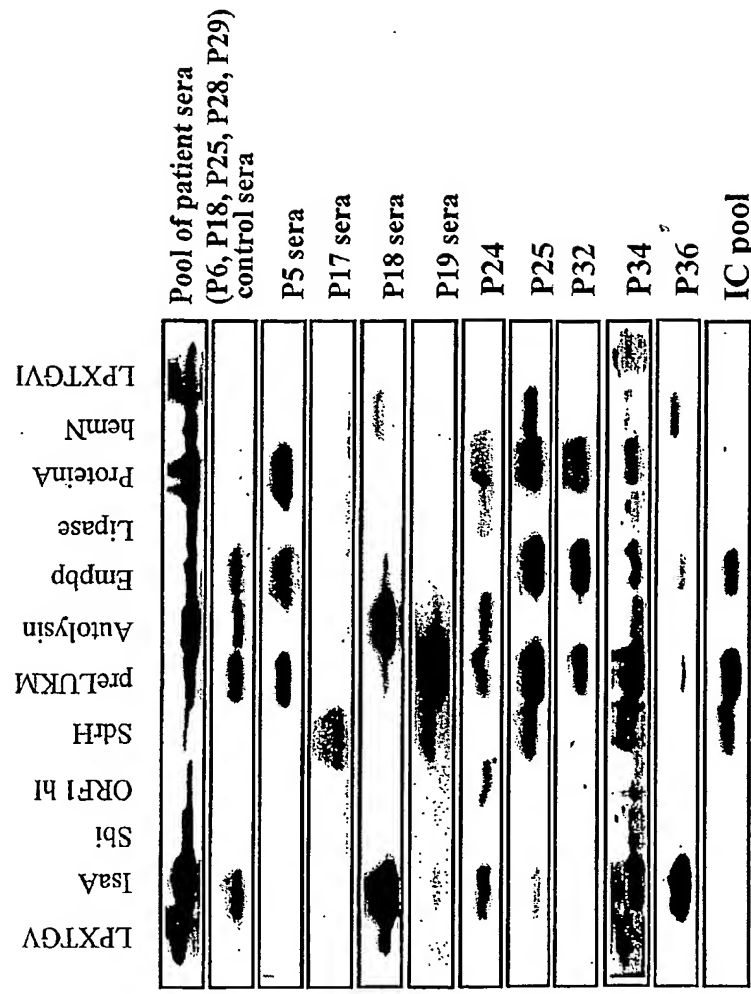


Figure 4

5/11

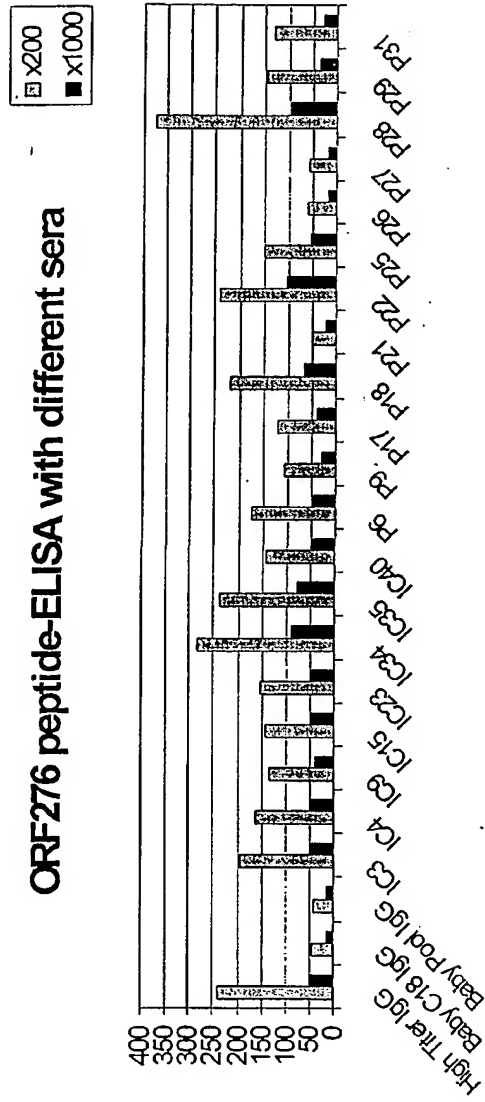


Figure 5

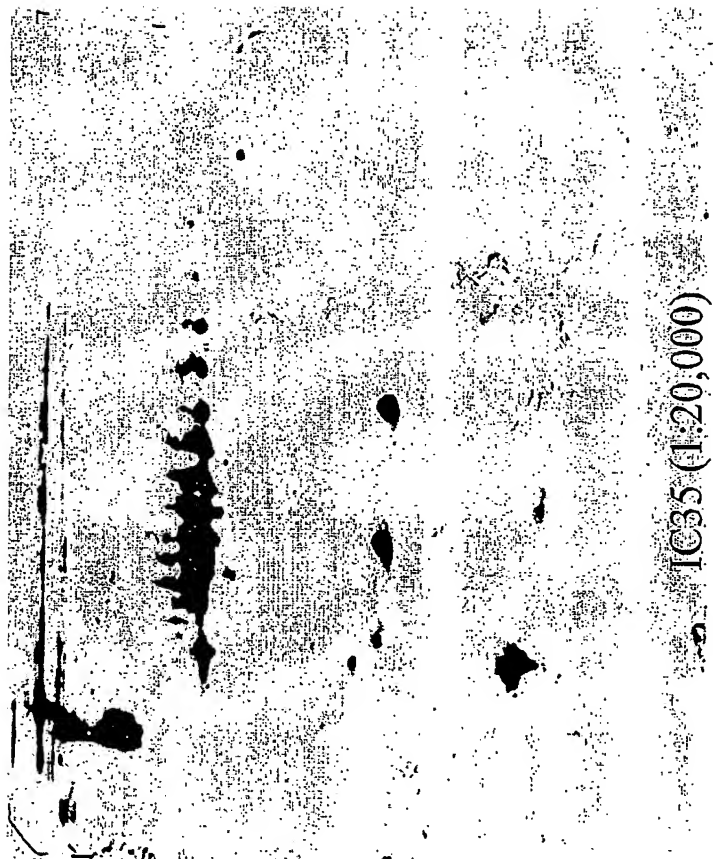


Figure 6

7/11

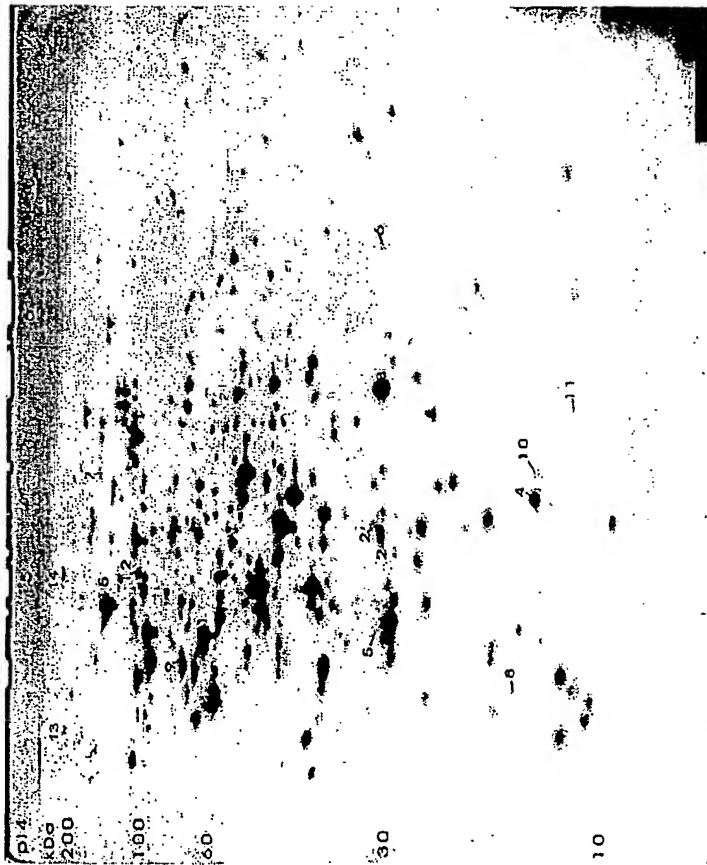


Figure 7

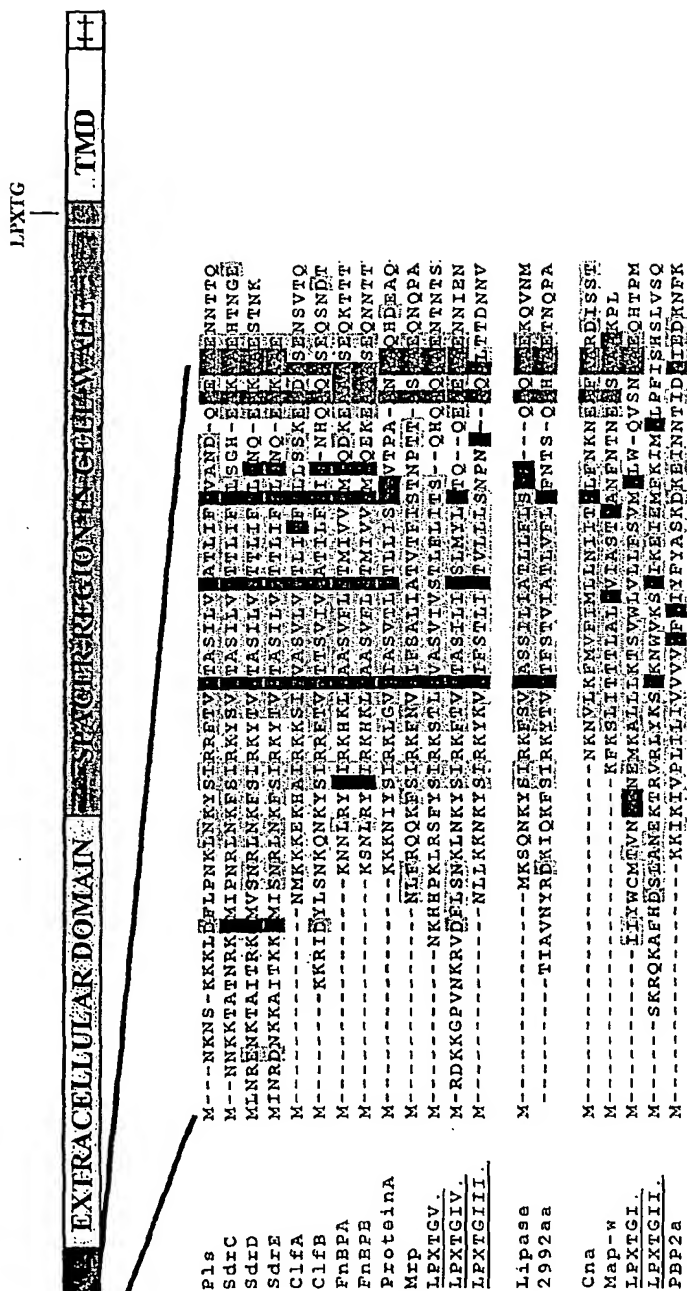


Figure 8A

9/11

Constitutive Cell Wall Proteins of *S. aureus* with LPXTG motif

Known proteins	Predicted M _w /pI	LPXTG hydrophobic membrane domain basic C-terminus
1 Mhp protein	255/4.6	AKTLPETGMSRNDLDAFAALGAGMAFLIRRTKKQQQTEE
2 Pls (MRSA)	167/4.1	NKELPDNDIQNNQNTFGSLFAALGGFLIVRRPKNNNEEK
3 SdrD (SD-repeat)	133/4.1	AKALPETGNENSGSNNTLFGGIFAALGSLILFGRRKKQNK
4 Cha	126/5.6	LKEHPKTKGQITTSWTWVFGILGLHYLLIRKRFNS
5 SdrE	117/4.1	AKALPETGSNNGSNNTLFGGLFAALGSLILFGRRKKQNK
6 FnBPA	104/4.5	KSELPEPTEGGEESTNKGMLFGGLFSILGLALIRRNKNEKA
7 SdrC	94/4.1	AKALPETGSNNNNNGTTFGGIFAALGSLILFGRRKKQNK
8 FnBPB	96/4.5	KSELPEPTEGGEESTNKGMLFGGLFSILGLALIRRNKNEKA
9 ClfA (clumping factor)	89/3.4	KGPIFDTEGSEDEANTSLIWSLIASTGSLILFRRKKENKDK
10 ClfB (clumping factor)	88/3.7	TDALPETGDKSENTATLFGAMMALGSLILFRRKKQDHKEKA
11 Spa (Protein A)	48/5.2	AQALPETGEENPFITGTVFGGLSLAIGALLAGRRREL

Predicted based on sequence (TIGR)	
1 Anonymus I.	79/9.3
2 Anonymus II.	227/4.2
3 Anonymus III.	200/4.1
4 Anonymus IV.	122/5.8
5 Anonymus V.	101/5.0

Figure 8B

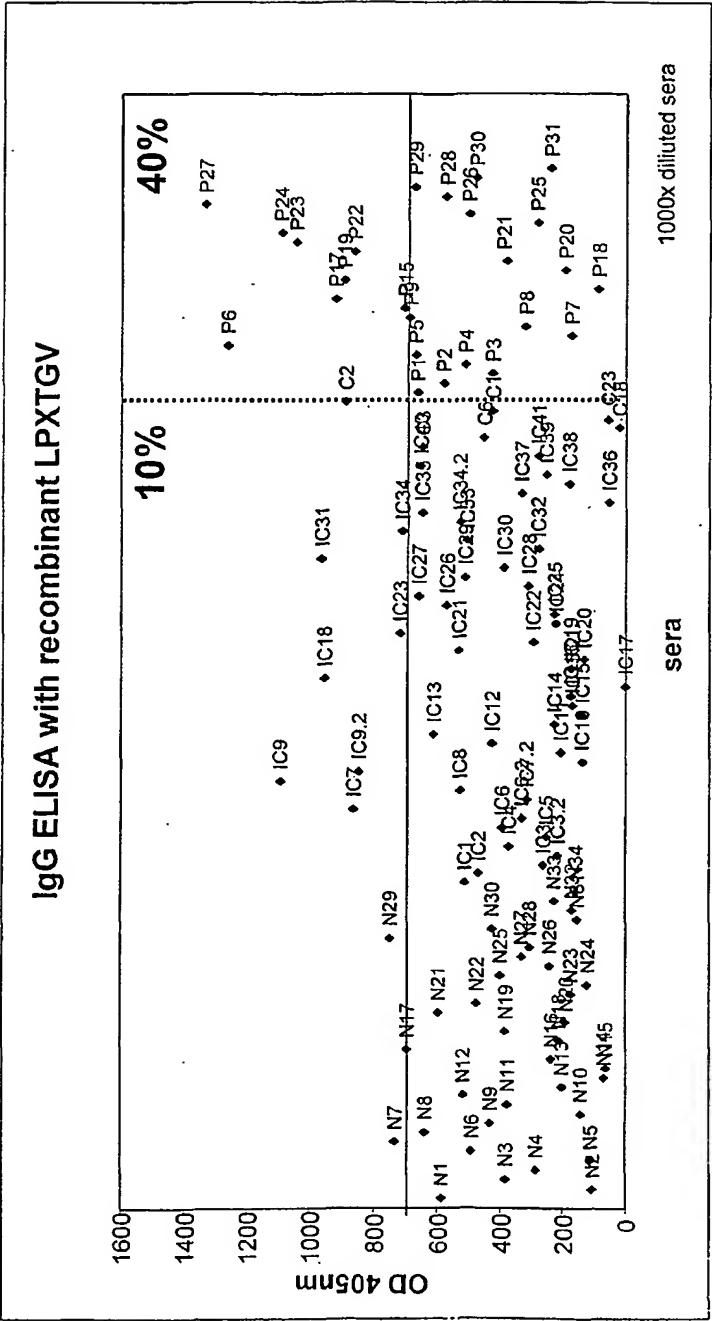


Figure 9

Surface staining of *S. aureus* (strain 8325-4 spa-) with purified anti-LPXTGV IgGs

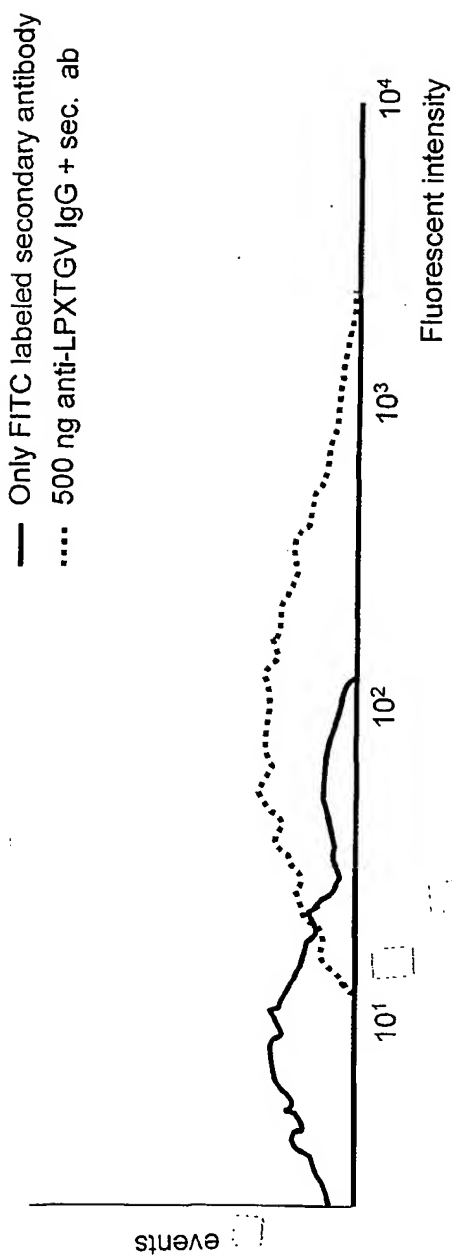


Figure 10

- 1 -

SEQUENCE LISTING

Intercell Biomedizinische Forschungs- und Entwicklungs AG
Cistem Biotechnologies GmbH

R 39035

Priority: Austrian Patent Application No. A 130/2001 of
26.01.2001

Seq.ID Nos. 1-598

Organisms: *S.aureus*; *S.epidermidis*

1.	<p>atgaacaacagcaaaaagaatttaaatcattttattcaattagaaagtcactactaggc gttgcattctgtacgaatttagtacactttttatttatttaagtcaaatggcgagcacaagca gcagctgaagaaacaggttggtacaaatcacagaagcacaacaaaaactgaagcagttgca agtccaacaacaacatctgaaaaagctccagaactaaaccagtagctaatgtgtctca gtatctaataaagaagttgaggccctactctgaaacaaaagaagctaaagaagttaaa gaagttaaagcccctaaggaaacaaaagaagttaaaccagcagcaaaagccactaacaat acatatcctattttgaatcaggaacttagagaagcgtttaaaaaacctgccataaaagac aaagatcatagcgcaaccaactctcgtccaattgattttgaaatgaaaaagaagatgga actcaacagttttatcattatgcaagttctgttaaacctgctagagttattttcactgat tcaaaaccagaaattgaattaggattacaatcaggtcaattttggagaaaatttgaagtt tatgaaggtgacaaaaagttgccaattaaattagttatcatagcgtactgttaaagattat gcttacattcgtctctctgtatcaaacggaaacaaaagctgtttaaattgttagttcaaca cacttcaataacaaaagaagaaaaatacagattacacattaatggaaattcgcacacacaaat tataacagtgagataaaattcaaaactgaagaagattataagctgaaaaattattagcg ccatataaaaaagcgaaaaacactagaaagacaagtttatgaattaaataaaattcaagat aaacttctctgaaaaattaaaggctgagtacaagaagaatttagaggatataaaagaagct ttagatgagcaggtgaaatcagctattactgaattccaaaatgtacaaccaacaaatgaa aaaatgactgatttacaagatacaaaaatattgtgtttatgaaagtggtgagaataacgaa tctatgatggatctctttgttaaacacctattaaaaacaggtatgcttaacggcaaaaaa tatatggtcatggaaactactaatgacgattactggaaagatttcatggttgaaggtcaa cgtgttagaactataagcaagatgctaaaaataacttagaacaattattttcccatat gttgaaggttaaaactctatgatgctatcgttaaagttcacgtaaaaacgattgattat gatggcaaatccatgtcagaatcgttgataaagaagcatttcaaaaagccaataccgat aaatctaacaacaaaagaacaaacagataaactcagctagaaggaagctactccagctacg cctagcaaaccaacccatcacctgttgaaaaagaattcacaaaaacaagacagccaaaaa gatgacaataaacaattaccaagtggtgaaaaagaaaatgacgcactctagtgaagtcaggt aaaggcgttaacgcttgctacaaaaccaactaaaggtagaagtagaattcaagtagtacaact ccaactaaggtagttatctacgactcaaaatgttgcaaaaccaacactgggtcatcaaaa acaacaaaagatgtgttcaaaacttcagcaggttctagcgaagcaaaagatagtgctcca ttacaaaaagcaaacattaaacacacacaaatgatggacacactcaaagccaaaacaataaa aatcacacaagaaaataaagcaaaatcattaccacaaactggtagaagatcaaataaagat atgacattaccattaatggcattattagctttaagtagcatcgttgcatcgtattaccct agaaaacgtaaaaactaa</p>
2.	<p>atgagaaatatagagaatctaaatcccgagattcagttgatcactttttcttagtgcat aaagctacacaggggtgtaacagcacaaggtaaagatttatgatgacattacatttgcaagat aaaagtggtgaaattgaagcgaaattttggacggctacaaaaatgatatggcaacaatc aagcctgaagaaattgtacatgttaagggtgacatcataaactatcgcggaataaacag atgaaagtcaaccaaatttagactagcgacaactgaagatcaattaaaaacagaaacattt gtagatggtgcacctttatcaccggcagaaatacaagaagagatttctcattatttgcta gatattgaaaaatgctaatttacaacgtatcacacgtcattttatgaaaaatatcaagaa cgattttacacatatccagctgctagttctcatcatcataactttgagagtggttaagc tatcatgtattaacgatgttacgtattgcaaaatcaattttgtgacatttatccattgtta aacaaaagtttggttatagtggtattattttgcatgatattggttaaagtttagagaattg agtggtcctgttgcgacgtcgatatacagtcgaaggtaacttataggacacatctcgatt gcgagtgatgaagtagttgaagcagctcgtgaattgaacattgaaggagaagaatcatg ttgttaagacatgatattttatctcatcatggttaagtttagagtatggttctccaaaactg ccactactaaaaagaagcagaaattttatgctatatacgataatcgatgctagaatgaat atgtttgaaaaggcatataaaaaaactgacaagggtcagttacagataaaaattattgggt cttgaaaatcgtagattctacaatcctgaatcactcgat</p>

3.	<p>atgaacaaacatcacccaaaattaagggtctttctattctattagaaaatcaactctaggc gttgcatcgggtcattgtcagtagacatttttaattacttctcaacatcaagcacaagca gcagaaaaacacaaatcttcagataaaatctcggaatacaaaaataaataatgcaactaca actcagccaccataggatcacaaatcaaacacacactgctacgcacacagcaaacactgcg aaaaactctcctgcagcggatgaatcacttaagatgcaataaagatcctgcattagaa aataaagaacatgatataggtccaagagaacaagtcatttccagttatttagataaaaac aatgaaacgcagtagctatcacttttccagcatcaaatgacagcagatgtgtattacact aaaaagaaagcagaagttgaattagacatcaatcactgttcaacatggaagaagttgaa gtctatgaaaaacaatcaaaaattgcccagtgagactgttatcatatagtcctgtaccagaa gaccatgcctatattcgattcccagtttcagatggcacacaagaattgaaaattgtttct tcgactcaaattgatgtaggagaagaacaaaattatgattatactaaattagattttgct aaacctatttataacgatccttccacttgtaaaatcagatacaaatgatgcagtagtaacg aatgatcaatcaagttcagtcgaagttaatacaaacacacgaatacatcttaataaaaat acatcaacgatcaacaatgcttaataatcaaccgcaggaacacgcaaatatgagtcacact gcacacccaaaatcgtaacgaatgcagatcaagcgtcaagccacacagctcatgaaaca aaactcttaattggtaatactaacgataaaacgaatgagtcgaagtaatcagtcggatgtta caacagtatccaccagcagatgaatcactacaagatgcaataaaaacccggctatcatc gataaagaacatcacagctgataattggcgaccaattgattttcaaatgaaaaatgataaa ggtagaaagacagttctatcattatgctagtagctgtgaaccagcaacgtcatttttaca aaaaacaggaccaataattgaattaggttttaagacagcttcaacatggaagaatttgaa gtttatgaaggtgacaaaaagttaccagtcgaatttagtatcatatgatttctgataaagat tatgcctatatctgtttcccagtatctaatggtagcagagaagttaaaattgtgtcatct attgaaatattggtgagaacatccatgaagactatgattatagcgttaattggtctttgcacag cctattactataacccagacgactatgtggatgaagaacatacaatttacaataaata ttagctccgtatcacaaagctaaaacgttagaagacaaagtttatgaattagaaaaatta caagagaatttgccagaaaaatataaggcggaatataaaaagaatttagatcaacttaga gtagagttagctgacatcaagtttaaatcagcagtgacggaatttgaaaaatgttacactaca aatgtagtcaatttaacagatttacaagaagcgcattttggttgttttgaaagtgaagaaaat agtgagtcagttatggacgggtttgttgaaatccattctatcacgcaactttaaatggt caaaaatattgtagtgatgaaaaacaaaggatgacagttactggaagaatttaattgtagaa ggttaacgtgtcactactgtttcttaagatccttaaaaataattctagaacgtgattttc ccatatacactgcacaaagcagtttacaatggcattgtttaaagtcgtgtggaacacatt gggtatgaaggtcaatcatgctcagaattataaatcaggatataatatacaaaagatgat gatataccacaaaaataacacagtgtaacgcgttaaatgtacaaacaggacagaaggttaag gttgctgatacagatgtagctgaaaatagcagcactgcaacaaatcctaaagatgcgtct gataaagcagatgtgatagaaccagagctgcagctggttaagatgctgataataatatt gataaagatgtgcacatgatgttgatctttatccgatatgtcggaataataactcctc gataaataatgatttaaaagaattggatctcaaattgccaaagatctgtagaagattgtg gataaagatgccgataatagcgttggtatgtcatctaatgtcgatactgataaagactct aatataaataaagacaaagtcatacagctgaatcatattgcccataaaaataatcatact gaaaaagcagcaaaagcttgacgtagtgaacaaaaattataataacagacaaagtact gacaaaaaaacactgaacatctgcccagtgatattcataaaactgtagataaaacagtg aaaacaaaaagaaaagccggcacacatcgaaagaaaacaaacttagtcaatctaaaaatg ctaccaaaaactggagaacaaacttcaagccaatcatggtggggcttatatgcgttatta ggtatgttagctttattcattcctaaattcagaaaaagaattctaaa</p>
4.	<p>Atgcagatttttaacatcacagatcattctacaacaaacatagccaaacacctagatac Agaagacctaaatttccatgggttaaaacagtcacgttgcatgtattgctggaattatt Ggtgcacttctagtagcttggtataggcaagatataaattagtagaatttttaataaagat Ggttcaactgttcagacacaaataataaaggtggcaatcaattagacggtcaaaagcaag Aaattcggtagcgttcatgaaatgataaaatctgtctccctacaaattgttgaggttatt Aacatgcacaaaagcatcaaggttagacgacttataaaaggcaaatcatctaaaccatct Gaagctggagtaggttcagggtgttatctatcaataaaacacaaattcagcttatatcgtt Acaaaacaaatcatgtttatgtagggcgaatgaaattagagtcgaattacataataaaaaa Caagttcaagcgaatttagttgtaagatgcaactgatatgtgctgacttaaaatt Gaaaatacaaaaaggtattaaagcgattcaatttgccaaactctcaaaagtacaaactggc Gatagcgtatttcgcaattgggttaaccattaggattacaatttgctaaactctgtaacatct Ggtatcatctcagcaagcgaacgtacagattgacgctgagacaaactggtggcaatacaaaa Gtagcgttcttcaaacagatgctgctattaaaccaggtaactcaggtggcgcattagta Gatattaatggtaatttagttggtattaaactcaatgaaaaattgctgcgacacaagttgaa Ggtatcggttttgctattccaagtaataagtttaaagtaacaattgaacaaacttgtaaaa Catggttaaaattgaccgaccttcgattggtattgggttttaatttaattgaaagatatctct Gaagaagagcgcgagcaactctactgtagagaagacgggtatttatgtcgccaaagct Gatagtgatattgatcttaaaaaaggtgatattattacagaaatttgatggcaagaaaatt Aaagatgatgttgatttaagaagctatttatatgaaaataaaaaacctggtgaatcagtc Actggtaccggttatccgtgatggtaaaaaacaaagaagttaaagtgaattaaaaacaaca Aaagaacacccaaacgtaaaagcagatcagaacgtaacacacgtccacacggaagcgataga gatttcttttaga</p>
5.	<p>ttgatgattaatgaaagagaagtggtttattttgatatatctagataatgcggcamcgacg aaagcattttgaagaagtgttagatacttattttaaagtaaatcaatcaatgtattataat ccgaatagtcgcataaagcgtggtttgcaggcaaatcaattactacaacaagcaaaaacc caaattaatgcaatgatttaattcaaaaacaaattatgatgttgattcactagtggtgca actgaatccaataatcttgctttaaaggtattgcttatcgtaaatgtatagcagcgaag gaaataattacatccgtgttagagcatccgtccgtattagaggttgtaagattattggaa gcacacgaaggatttaaagttaaatattgttgatgtaaaagaagatggcagttataactta gaacacttcaagaaattatgtcagacaaagtcggttttagtaacatgtatgtatgtaaat aatgtaactggacaaatacagcctattccacaaatggcctaagttataaaaaattatcct aaggcacattttcattgtagatgcggttcaagcattcggcaaaatttcaatggatctcaat aacatgatagatttagtttaagtggaacacagtttaattggttttaaaaggacaagcgctc tactttgtaaatcacattcaaaatgttgaaccaactgtccatggtggtggtcaagaatatt ggcgttagaagtggaacagtttaatttgccaaatgatttgcaatgggttaagcgaatgaag atagctaatgaaaactttgaagcattgaatgcatttgttactgagttaaataatgacgctc cgtcaatttttaataaataatcatggagtttatatttaattcttcaacttcaggttcacca ttcgttttaaatattagttttcctggcgtaaaaggtgaagttattagtttaatgcttttca aaatagcattatgatattcagcaagtgctgttctatctaaacgtaataaataaataat gaagatttgctgcaatgggattatcagacaaatctattgaaggtagttataagattatca tttggggctactacaactaaagaagatatagcgaggttttaagaataatttatcatcatt tatgaggaattaaagaggttgctaaaa</p>

6.	<p>gtgaaccaacaacaggagaaaacaacaacacgccaacaacaattaatccattaacggga gaaaaagtagggcgaaggtagaaccaacacagaagtacaaaaagaaccagtagatgaaatc acacaattcgggtgagaagaagtaccacaagggtcataaagatgagttcgatccaaactta ccaatttgacgggtacagaagaagtaccagggtaaaccaggcatcaagaatcctgaaacagggt gaagttagtaacacctccggttgacgatgtcacaaaacatgggtccaaaagcaggcgaacca gaggttactaaagaagaaataccattcgagaaaaaacgtgagttcaatccagacttaaaa ccagggtgaagagaaagttaacgcaagaaggacaaactggagagaaaaacaacaacgcca acaacaattaatccattaacgggagaaaaagtaggcgaaggtagaaccaacacagaagta acaaaagaaccagtagatgaaatcacacaattcgggtgagaagaagtaccacaagggtcat aaagatgagttcgatccaaacttaccatttgacgggtacagaagaagtaccagggtaaacca ggcatcaagaatcctgaaacagggtgaagtagtaacaccaccagtagacgatgtcacaaaa catgggtccaaaagcaggcgaaccagaggttactaaagaagaaattccatatgaaactaaa cgcgatttagatccacaactggaaccaggtagtcttgataaagtagctcaaaaagggtgaa aatgggtgaaaaaacaacaacacacacactacaattaatccattaacgggagaaaaagta ggcgaatggcgaaccaacaacggaagttaacgaaagaaccaatagacgaaattgttaactat gcacctgaaattatctctcatggttacacgtgaagaattgatccaaacttaccagaagggt gaaactaaagttatcccaggtaaaagatggcttgaaaagatcctgaaactggagaattcatt gaagaaccacaagatgaagtaattcatccatgggtgctaaagatgattcagatgaggacagc gattcagacgcagatagcgatttctgatgacagacagcgactcagacgcagatagcgactct gatgacgacagcgattcagacagcgatagcgattcagattcagatagcgactctgatgag gacagcgattcagacgcagatagcgattcagattcagatagtgactctgatgaggacagc gactcagacgcagatagcgactctgatgacgacagcgactcagacgcagatagcgattct gattcagacgcagactcagacgcagatagcgactcagattcagacgcagattcagacgca gatagcgactcagacgcagatagcgattcagacgcagatagcgactcagacgcagatagc gattcagattcagatagcgactctgatgacgacagcgatagcgattcagattcagacagc gactcagacgcagatagcgattcagacagcgattcagacgcagatagcgactctgatgag gacagcgactcagacgcagatagcgactcagacgcagatagcgattcagattcagacagc gactcagattcagacgcagatagcgattcagattcagacagagactcagacgcagatagc gactcagacgcagatagcgactcagattcagacagcgattcagacgcagatagcgattca gattcagatagtgactctgatgacgacagcgattcagacgcagatagcgactcagattca gacgcagatagcgatttctgatcagacagcgactcagacgcagatagcgactctgatgag gacagcgactcagacgcagatagcgatttctgatgacagacgactcagacgcagatagc gattctgattcagacagcgattcagacgcagatagcgactctgatgacgacagcgattca gacgcagatagagatcataatgacaaaacagataaaacaaataataaagagttaccagat actggtaattgatgtcctaaaataatggcacattatttgggttcactattcgctgcgcttgg ggattattcttagttggcagacgtcgtaaaaaacaaaataatgaagaaaaa</p>
7.	<p>gtgaagtcattgaagacgggtgattggggatgaataataaggagcatattaaatctgtcatt ttagcactactcgtcttgatgagtgctgatttgacatatatggtatggaactttctcct gatattgcaaatgtagacaatacagatagtaagaagagtgaaacgaaaccttttaacgaca cctatgacagccaaaatggatacaactattacgccatttcagattattcatttcgaaaaat gatcatccagaaggaaacgattgacagcggtatctaatgtgaataaaactgacgaaacctttg aaaaataaagaagtgaaagtccgtggaacatggtcgtcgatcataacttgatgattcct gatttgaacagtgattttatattatctgattttacgtatgatttaccggttatcaacatat cttggtcaagtactgaacatgaatgcgaaagtaccaaactcatttcaatttcaatcgtttg gtcatagatcatgatgctgatgataatcgtgctttatgctataagcaaaagatcgccac gattacgttaaaattacaactacaacgaaaaatgatcattttttagatgcattagcagca gtgaaaaaagatatgcaaccatacacagatatcatcacaaaacaaagatacaattgatcgt acgacgcattgtttttgaccaaagttaaacctgaaaagttaaaaacatatcgcatggtattt aacacgatttagtgttgagaaaaatgaatgctatactatttgacgattcaaccatcgttcgt agttcaaaagagtggtgttacaacctacaacaaataatacaggtgtcgcaaaactataacgat aaaaatgaaaaatatcattataaaaacctgtccgaagatgaagcgagttccagcaaaatg gaagaaacgattccaggaaacctttgattttatattatggtcatggtggtttcttaaacgaa gacttttagattgttttagtacgaataatcagtcaggcgagttacatatcaacgtttcctt aatgggttatccaaagttlaataaagaagggttctaatcaattcaagtcacttggggtgaa aaaggcgctcttgactatcgtcgttcgttattacgcaccgacggtgttttaaatagtgag gataataaatcgtttgcccgaatttagagtcgttacggttcaagcttagcgaacaatagtgat attaattttgaaaaagtaacaaacatcgctatcggttacgaaatgcaggataatttcagat cataatcacattgaagtgacagattaacagtgaaactcgtaaccgcttggtatcgtagaat gatggcgaatggtatgtttataacgatgggaggcttgaa</p>

atagatgtaaagacagadaagcatttcatgacagcttagcaaacgaaaaaacagagtgaga
ctttataaacttgggaaaaaattgggtbaaaactcggaattaaagaaaatgaaaatgtgtcaa
attatggggctaccattttattagcttagtttagtgagtcagataatacaagcatttagt
aaaaaaatgcagggatcaggactgaaactcagccggttttagttggtgtcattcaggtta
aatatgttgcatgcaccagcaagcttttgcggtcttgatgcacatttaactctgataa
aacacacaaagtgaacacagtaggttaatcaaaactcaacgcacactcgagcattcaacatca
acagccgatcccaacagtgtaacagaaaaatagtagttcggtgataacatacaaatagtcac
acagctcctaagtgaaaagtctgaaaaaggtcacttcgcatacaataagtacaagcaatcaa
cagagaanaattgcacatcaccatcagaatcaacatccccaagaatcacatcatcaggttctt
gatactaaactctgtagcttccaactcaagtcacagacaaccaataatacatcaacaaat
caaagttactgcatacaaatcaacttcacaagcacaacgcctacttcggttcaacttaaac
aaaacttagcacaaactccaactagcagccaccagtaaaacttgcgaacttcagttcgcttta
gctatgtccaacatttgcgtcagcagcgacgacacccgcagtaacttgctataacaattaca
gttaataagaataacttaaaaacaatatgacagacatcaggtaatactgcctacctatgatcaa
gttaaccggttatgtgacgttaacacaggtgcatacagcgaagaggtgctatttcacata
ggaaacaggttatgactctaaataaagatttccattttctggaaaaagtaaattaggttaa
aaaatgaagggcagtgaaaatgggtggagattggtatcggttttgcctttcacacggtgtg
ttaggtgaaacagggtttaaacggtgcgcgcagtaggtatttggtggtcttaagttaacgcat
tggcttcaaattggtatcgtatcacatactataaccaaaacttcagctgcaaaagcgcaat
gtgccaccatctaattagctgtgtggaggtgctgttgggtcatttgtaacaacagatagtt
tatgtgtctgcccagcaactatcacatcaagttcaacagctgataatgttcggcgaagttaaat
gttcaacctcaaaataacacggttccaagatttgataattaactaatgtgtgatacaaaag
gttatgactgtccaaattgcaggtgcaaacatggacacgtaaatatttcagatttggtatgcg
aaaagtggtacgacaaacttttcattcaatgaacagcctcaacggtggcgcgacaaatt
tcacaacaagtacaatttggaacatttcgaatatacagagttctgctgtttacacaagtgaga
tacgttgatgttacaacaacggtaaagatatatttccaccaaaaacatttcaggaaaagtggt
gtcaagctgtgataactcgataactcagcaattctgcatttgactgtctaaaggtataactac
acgtccgtgcagtagttcattatgcgtccaacttataattgatacaaaaacttaaaagttaaa
acgaattctggacaactcagtgacataatttttactgatgttaaaagaccaactgtgaact
gtaggcaatcaaaccatagaagttgggtbaaaacaatgaatctatttgattgactcaacg
gataaattggtatcgggactgtgacaatacagttacaggttaccatcaggcggatttaagttac
gatatgtgcaacgaaatccaatcatttgggacaccaaaaaaatttggtcaattcaacagtgaca
gtttgtcttactgaccaggaataaaaaactcagcagcaactttcacaataaaattgtgtg
gtatgcagcagcacaacagtgacacaaataggagtaacatcatcagaagttgatttcacca
atatcccgatataaaattgctacggaagtacacagtggaataatcgggtgacgaatacagtg
actgattgcccactccggaactaacatttgatagtaacaaataactattaggtgtcacaca
acaaacattggtacaagttactataaatcggtttctacagatgcggcggtacaaaaacg
acgacaacttttaataatgaagtaacaagaataatgcatagttgatttcggtatccaactca
ggaaagtacacaacaactccaaggtgtgtcaacaagtaaaagtcgactcaaaaagtgcatca
acggtatcatcggatcggatttggttatctacatcagttacgttccaactcgacaagtt
gtgaagcctatctgattctgtgagtgcatctaaagtcatttaagcaagtcgttaaggttaattg
gtatacagctcaacaagcacaagttttagtgaaatcaaaaagttgatactcaagcatgttcg
gattcagctagtaaatcaacattcattaaagcattctatttcaaaactcagcagttactgaa
aaatccgaaagttctatcaacaagttacatctgattcatttgcgtacatcaactcactcagtt
gactcattaagttaggtacatcaggaagcttcttaagtcacaaagcttatcaacaggt
atatcagggtcgctctagttacatcagcatcatttaagtgcagatcattcgaatgaattagt
acatacaacatcatttgagcggctcagtcagcaacactcgggaactctatagttattcaaatagc
atagccaactctcaaaagtgcgtccaacagcaaatcagattcacaaggtacatcaatatca
ttaagtacaagttgatccaatctgattgagttacatcagatcaattgaagcgttcgcagcagc
acaatgggttctgtttctggtatcactaaagatagcagatcacaagaagttctcaacaagt
acatcagactcgatgagttacttcagagatagtaagtgaactctatcagttacaagttgggtca
ttatctgcattcagacagtaaaatcaatgtcgtcaagtaggttcaatgagcagcttcagttca
gggtatcatcagaatcattaagttatccaagaagttacatctgattctgatatagttca
ttatcaacaagttactgataatcaggttccaacagttacatcaacgtcgacaagttgcttca
gtacgtactctggaattccaagaagtcagttctggttcaatgagttcgaagttcaactccggttca
atgagcatatcaacgtcgttttaagttatccaacgagttagatgcaaatcagcatcaactgtca
ccaagttgaatcaatatcaaaaagttgcttctaagcagcatctggttcggttaagttacttcg
acatcgtttaagtaacaagtaattcagaagttacatcaacatctatagttgattccacaagtc
ttaagttacatcagagttctgattcaataaagttgaattcaacgttcacagcagcagcttataagt
gaagcaatctcgtctcagagagcagctttatcatcttaagtgaaatcaaatgactatagc
gattcagaatccaagaagtcagttacttgctttttaagtgaaatcaatgaagtgaagttacgct
gaatcaacatcagagttcagttagttatgcgaagtgaggtacgtcttatcagacagatt
acatcagaattcgttgtagcatccaatcatttaagtaattcaacaagttggtagttacgttcc
attcaacatcgacaagttacgtgtaattcaacgtccaagttttaagagcgagagttgtttca
acatcactgagttatgttcacagagttacaagttttgtctgacttcaagtttgcataacatca
ttaagttgattccacaagttgatatgagttcgtattcatttaagttacatcaatgtcgacaagtt
gattcaactagttacaagtaaatctgattccattagttacatccaactcaatttaagttggtt
ccaagtgaaagttaactcgattccaacatgaatgagatcaagttatgtctcaatacaacatca
ggaagtacaagttacaacgcaggtacaagtttctgtactcaacaggtacatcatctgtca
ctaagttgcttcaatgaaatcaaaagcggagtagactcaactcagcaagccaaggtgctcca
aatcaacaagttacaacgcagcaggaatccgattcacaagaacatcatcatatacaagtt
cagtcacaagaagccaagttgaattccatcagtcacatcaagttcattcagcagttcaacaagtt
atatctaaaagtcaggtcbaatcaggttgcgtgaagcagatcaggttcaatttaagttgttca
gagatgaaatctgattccacaagttatctcgaagttcaggtcaggtcattcaatcagagaagtt
cgttcacatcactcagttgattccaacagttacaagttacatcaggtcagcaggtcagttca
acatcgtctcagttacatcagcaagcgaagttcaattcgatttctgtcacaagctttaaagtt
gattcaacatctcgtcgtcaatgcaaaagcagttgaatccgatttcaaaaagcattcagatcca
ttaagttgattcgttaagttacatcaacttcaaacccgatttcgcacatttgaagtttatct
acatcgttaagttacatcagagttctggtccaactcagaagttacaagttgaattccgattcca
acatacaacatcatttaagcgtattcacaagacatcagaagttacaagttcattcaggtatcca
cgaagttacatcaacatacaaaagttgactctggttagttacatcaggttcaactagtacttcg
atgctgcacaaagtactgtgattcacaagaagttgtgcttctgcacaaagttacatcaacaagt
atgagttgattcaacgtacttatctgtatgtgttagttgattcacaactcagatcacaagtt
cggagttacatctggttcgagttgagttgtcttatctggttaagttatcgcacaagttacatcca
acatcgggtgagttgaagttatgagcgcagacatctgattcacaagaattgtcagaattct
gtaaatgtattcagaagaagttgaagttgaattcaattcgaagttgacttcaaatcaggttaggt
ggctccaagaagttcagttgattctcgtctcattgagcttccaagttcattgaagaaatcca
gaaggtgaagcggagttcaagttcttagttgtgtccaactcaggttagcgtatcagtaagc
acaagttattcgtatcatttaagttgattcgaagttcactgaagaagttcagaagcgggtgagtt
gactcgtgattcatttaagttgattcaaaatcaacaagttgttcgacttcaaacagttacattct
ggttcaatttagttacctcaacatttaagttggttcagaagcgtgaagcaggttcaacttcg
ctaagttgattcabaatcaattgagttgattcttactagttacaagttgacttcgactcatttaagt
ggatccaatattccttaagttgttccacaagttctagacttcggatttcggtatttaagttgattct

aaatcattgagtagctcgcaaagtatgagtggaatcagaatcaacgtcaacaagtgtagc
gattcgcagtcgaagctcaacaagtaatagtcatttgactctatgagcatcagtgcatca
gaaagcgactcaatgtctacaagtgattcgtctagcatcagtggaatcaaatcaacgagt
acatcactttcaacatctgactcaatgagcggagcggtatcagtttcaacatcgacaagt
ttaagtgactcaatcaggttcaacaagtgtaagtgactcgagctcaacaagcacatct
acatcattaaagtattcaatgtcacaagccagtcacaagtaagaagtgcatctggttcc
ttaagtacatcgatatcaacatcaatgtcaatgagtgctagtagatcgtcatcacaagc
acatcgggtgcgacatcattatcaacatcagacagtagtcagtgattctacttcaataagt
atcagtggttcacaagtagtagaatacagaatctacaagtgattcaacttctatcagt
gactcagaatcattgagtacatcagattcagactcgacatcgacaagtagcatcggactca
acaagtggttcaactcaacaagcatatctgaatcattaaagtacgtctggttcaggttca
acgagcgtatctgactcaacatcaatgagtgaaatcatttcacgagtggttcaatgtca
caagacaaatccgactcaacatcaattagtgactcagaatcagtggtcaacaagcacatca
acgtcattgagcacatccgattcgacaagcacatccgaatcactgagtagcatctatgtct
ggttcacaagcatttctgactcaacatcaacaagtagtcgggtcacaagtagcatct
gaatctaactcaatgcattccgtagactcaatgagtagcatcactacagcacgagc
acatctcgcttatcaagtgaaacacacgagcagcagtggaatctcagttacattaaagt
gcaacatctgaagtgactaaacataatggcacaccagcacaagtgaaaaagattgcca
gtagcaggtgactcaataaaacaaaatggattactaggtggcgttatgacattattagtt
ggtttaggtttaatgaagagaaagaaaaagaaagatgaaatgatcaagtagattctcaa
gca

9.	<p>atgcctaaaaataaaattttaattttatgtctatcaactacgctcggtattacctacttta gtttcacctaccgcttatgtctgatacacctcaaaaagatactacagctaaagacaacatct catgattcaaaaaaatctaatgacgagtgaacttctaggatactacaagtaagatatt gataaagcagacaaaaataatataagtaaccaagacataacgacaaaaatttaaaact atagacgacgacacttcagactctaacaatatcattgattttattataagaatttacca caaaccaataataaccaatttgctaaccaaaaataaatacgagtataattactcattaaca actttaatccaaaacttattcaatttaaattcggatatttctgattacgaacaacctcgt aatggcgaaaagtcaacaataatgattcgaataaaaaacagtgacaatagcatcaaaaatgac actgatacgcgaatcatctaacaagataaagcagacaaatcaaaaagcacctaaatcaaac aatacaaaaccaagtagcatctaataagcaaccaaatcgccaaagccacacaacctaat caatcaaatagtcacaccgcaagtgacgataaagcaaatcaaaaatcttctcgaagat aatcaatcaatgtcagattcggcttttagactctatttggatcaatacagtgaaagtgca aagaaaacacaaaaagattatgcatctcaatctaaaaagacaaaaatgaaaaatcta acaagaatccacagttaccaacacacagatgaattgaacataaatctaaacctgtcaa ctattcaataacgagtgttaatacaaaaggatcacggtgcaacatcatttctgaacagat cctagtatatctaacaatgatgtagcggaacatttaacggttggtgactcaaaagataca cgtaaatgtgcaaatcaattgctaagatgcacatcgcatgtgtcaagataacgataatt tatgcgtctgtcatgattgcccgaagcaatcttagaatctgactcaggtcgtgctgttta gctaagtcacaaacctaatttattcggtatcaaaagtgcttttgaagggaattctggtt ccttttaacacattagaagctgttgtaataatgttatagtattatgtctggattccga aaatctcaacgacgaaagaatcactaaaagattactctgaccttataaaaatgggtatt gtggcaatcgaaacatttataaaccacatggaaatcggaagccgattcttataaagat gcaacatcacacttatctaaaacatagtcacagatccaaactatgtcaagaataaaca agtattataaacactatcaattaaactcagtttgacgatgaacgcatgcccagatttagat aaatagaaacttctatcaaggattatgatgattcatcagatgaattcaaacctttccgt gaggtatctgtagtatgcatatccacatggccaatgtacttggtacgtatataacggt atgaaacatttggtagatctatctcaggtgatttaggtgagtcacataatgggaataat cgagctcaataccggtgattatcaagtaagtcataccaaaacgctcatgctgctgtgta tttgaggctggacaatttgggtgcagatcaacattacggtcatgtagcatttgggtgaaaa gttaacagtgatgggtctatcgttatttcagaatccaatgttaaaggattaggtatcatt tctcatagaactatcaacgcagctgcccgtgaagaattatcatatattacaggtaaa</p>
10.	<p>gtgaggaaatttcaagatatgcatttacaagtatggcagcattaaccttgttgagcaact ttatcaccagcagcattagcgtattgattcaaaaaataaacagctaattctgtatataaa tttgagggtgactcaaaagagtgtgctggtcaagcattaaaagaattgcctaataccgaa aatgtaaaaaatatttatcaagattacgctgttactgattgtaaaaactgataaaaaagga tttacgcattatatacttgcaaccgagtggtgatgggtgttcacacctgacaaagaagtg aaagtacacgcagacaaatcaggaaaaagtcgttttaataatggggatctgtagcgaag aaagtaaaagccaaagataaagtacattaaagtaagatgacgcagccgacaaagcattt aaagcagtttaagattgataagaataaaagcgaataatcttaaagataaagtcattaaagaa aacaaggtgaaatcgatgggtgacagtaataaaatagctttataatgttgagtttaataca gtgacaccagaaatttcacattggaaggttaaaattgatgctcaaacctggcgaatttta gaaaaaatgaacttagttaagaagctgcagaaactggtaaggaaaagggtgacttggc gatacaaaagatatcaatatcaatagtatgacggtggatttagcctagaagatttaacg catcaagggtaaattatcagcatttagctttaatgatcaaacagggtcaagcaacattgatt actaatgaagatgaaacttcgtaaaagtagcgaacgtgctggcgtagatgcaaattat tacgctaaacaaacatatgattattacaagacacatttggtcgtgaatcatatgacaac caaggtagtccaattgtttcattaacgcatgttaataactacggtgggtcaagataacaga aataatgccgcatggatcggtagacaaaatgatctatgggtgatgggtgcacattc acaagtttatcgggtgcaaatgacgtatgacacagcaattaacacacgggtgtgacacaa gagacagcgaacttagaataaaggaccagtcaggcgctctaaatgaaagcttttcagat gtttttggatactttgttagatgacgaggatttcttaattgggtgaagatgtctacacacct ggaaaagaggagagcgtttacgcagcatgtcaaacccagaaacatttgggtcaaccagct catatgaaagactatgtattcactgaaaaagataatgggtggcgtacatacgaattctgga attccaaaataaagcagcttataacgtgattcaagcaatagggaattcaaatcagaacaa atttactaccgagcatttaacggaatacttaacaagtaattcaaacctcaagattgttaa gatgcattataccaagcggctaaagatttatatgacgagcaaacagctgaacaggtgtat gaagcatggaatgaagtaggcgtggag</p>

11.	<p>ttgaaaaaagaattgattatttgcgaataagcagaataagatttcgatttagacgtttt acagtaggtaccacatcagtaaatagtaggggcaactatactatttgggtagggcaatcat caagcacaaagcttcagaaacatcgaacgatacaaacgcaatcttcgaaaaataatgcaagt gcagattccgaaaaaacaataatgatagaacacacctcaatataacacacgggtaaatgat aatctctgatatagtgcaaacacaaacagtgcaaatgtagatagcacaacaaacaaatg tctacacaaacagagcaataccactacaacagagccagcttcaacaaatgaacacactcaa cgacggcaattaaaaatcaagcaactgctgcaaaaatgcaagatcaaacgttctctcaa gaagcaaatctcaagtagataataaaacacgaatgtagctaatagcatagcaacaaac agtgagcttaaaaatctcaaacatttagatttaccacaatcatcaccacaacagatttcc aatgcgcaaggaactagtaaaccaagtgtagaacgagagctgtacgtagtttagctgtt gctgaacccgtagtaaatgctgctgtagtctaaaggtacaatgttaaatgataaagttacg gcaagtaattcaagttagaagactacatttgacctaatcaaaagtggtaacacattt atggcggaattttacagtgacagataaagtgaatcaggggattattttacagcgaag ttaccagatagtttaactggtaatggagacgtggattatttcaattcaataatcagatg ccaattgcagacattaaaagtacgaatggcgatgttgtagctaaagcaacatagatatac ttgactaagacgtatacatttgcctttacagattatgtaataataaagaaaaatataac ggcgaattttcattacctttatttacagaccgagcaaggcaccataatcaggaacat gatgcgaatattaatattgcggatgaaatgtttaataataaaattacttataactatagt tcgcaatttcaggaattgataaaacaaatggcggaacatttcttctcaaatatttggg ttagatcacagcttcaggtcaaaaacacatacaagcaaacagatttggtaacccaaagcaa cgagtttttaggtaatacgtgggtgtatatataaggttaccagataaaatcgaagaaagt agcgttaagtagtgctacagatcaaaaactgagaatttttgaagtgaatgatacatct aaattatcagatagctactatgcagatccaaatgacttcaacctaaagaaagtacagac caatttaaaaaatagaatctattatgagcatccaaatgtagctagtataaatttgggtgat attacttaaacacatagttagtatttagtagaagggtattacgacaatacaggttaagaaactta aaaaactcaggtttattcaagaaaaatgttgatcctgttaacaaatagagactacagattttc ggttggaataaatgagaatgttgtagcttatgggtggggaagtgtgtaggtgattcagca gtaaatccgaaagacccaactccagggccgctgggtgacccagaaccaagtccagaccga gaaccagaacccaacgacagatccagaacccaagtccagaccgaacccaacccaaccca gaccggatccggattccgattcagacagtgactcagggtcagacagcagactcagggtca gatagcgactcagaatcagatagcgattccgattcagacagtgattcagattcagacagc gactcagaatcagatagcgattcagaatcagatagcgactcagattcagatagcgattca gattcagatagcgattcagattcagatagcgattccggattcagacagtgattcagattca gacagcgactcagaatcagatagcgactcagaatcagatagtgagtgagtgagtgagtgag gactcggactcagacagtgattcagactcagatagcgattcagactcagatagcgattca gattcagacagcagactcagattcagacagcagactcagactcagatagcgactcagactca gacagcgactcagattcagatagcgattcagactcagacagcagactcagactcagacagc gactcagactcagatagcgactcagattcagatagcgattcagactcagacagcagactca gattcagatagcgattcggactcagacagcgattcagattcagacagcagactcagactcg gatagcgattcagattcagatagcgattccgattcagacagtgattcagattcagacagc gactcagactcggatagcgactcagactcagacagcgattcagactcagatagcgactca gactcggatagcgactcggattcagatagcgactcagactcagatagtgactccgattca agagttacaccaccaataatgaacagaaagcaccatcaaatcctaaaggtgaagtaaac cattctaaataggtatcaaaacacacaaaactgtagctttaccagaaacaggagataag agcgaacacacaaatgcaactttatttgggtgcaatgatggcattattaggatcatacta ttgtttgtaaaaacgcaagcaagatcataagaaaaagcg</p>
12.	<p>atgaaaaagacaattatggcatcatcatttagcagtggttaggtgtaacaggttacgca gcaggtacaggacatcaagcacacgctgctgaagtaaacgttgatcaagcacacttagtt gacttagcgataatcaccagatcaattaaatgcagctccaatcaagatgggtgcatat gacatccactttgtaaaagatgggttccaaataaacttcaactcaaatgggtactacatgg tcattgagctatgaagcagctaatgggtcaaaactgctgggttctcaaacgttgaggtgca gactacactacttcatacaaccaaggttcaaatgtacaatcagtaagctacaatgcacaa tcaactactcaaacgttgaagctgtttcagctccaacttaccataactacagcacttca actacttcaagttcagtgagattaaagcaatggtaatactgcaggtgctactgggttcatca gcagctcaaatcatgggtcaacgtactgggtgtttcagcttctacatgggtgcaatcatc gctcgtgaatcaaatgggtcaagtaaatgcttacaacccatcaggtgcttcaggtttatcc caaactatgccaggttgggttccaacaaacactgttgaccaacaaatcaacgcagctgtt aaagcatacaaaagcacaaggtttagggtgcttggggattc</p>
13.	<p>ttgggaggatatttaattatgaaaaaatcgttacagctacaatcgctacagcaggactt gccactatcgattttgaggacatgatgcacaaagccgagaaacaaataacatggatatt aattctaatgacgctcaatcatagcgtatacgtatacaattgatgcacaaggttaattat atttcaacttggacaggaaattggaatccaagtcaattaacgaaaaacacataactac tacaacactacaataactttagttatacaaatgcatcttacaataactactataatcat tcatatcaatacaataactatacaacaaatagtcaaacagcaacaaataactattatact gggtggttcaggtgcaagttatagcacaacagtaataatgttcatgtgactacaactgca gcgcactcttcaaatgggtcgttcaatttctaatgggttatgcatcaggaagtaacttat acttcaggacaatgtacttattatgtatttgatcgtgttgggtgggaaatgggttcaaca tggggttaacgcaagtaattgggttaacgcagctgcacatctggctatacagtgaaacaa acaccaaaagttgggtgctatcatgcaacaaacacaaaggctattacgggtcatgttgcttac gttggaaggcgttaacagcaacgggttctgttcgtgtttcagaatgaactatggacatgg gctggttggttgcgtcgttacaatttcagcaaaccaagcaggttcatataaatttcatt cat</p>

14.	<p>gtggctaatacgaacacacattagatatcactggtatgacttgtgcccgcattgttca aatcgatcgaaagaaactgaataaacttgatgacgttaagtcacaaagtgaatttaact acagagaaagcaactgttgagtataacccgtgacacatgatgtccaagaatttattaat acgattcaacatttaggttacggtgctgtagaaactgtcgaattagacattacaggt atgacttgtgctgcatgctcaagccgtattgaaaaagtgttaataaaatggacggtt caaaatgcaacggtcaatttaacaacagagcaagctaaagttagctattatctgaagaa acagatgctgataaacttgcactcgcattcaaaaattaggttatgacggtctattaaa gataacaataaagatcaaacgctacgcaaaagtgaagcgtacaacataaattgattaag cttatcatatcagcagattatctttaccactattaatgttaagtgttgatcattttc aatatgcataaccagcactatttacgaatccatgggttccaatttatttagctacacct gtacaatttattatggatggcaatttattgtaggtgcttataaaaacttaagaaatgggt ggcgccaattatggatgtacttgttgcgttgggtacaagtgcagcatttttacagttatt tatgaatttgcgttggctaaatgggtcaacaacgcaacgcatttatactttgaaca agcgccgtactaatacccttaatttattcggtaagtatttagaagctagagcgaagtct caacaaccaaattgcgcttggcgaattttaaagttacaagctaaagaagcacgatttta aaagatggttaagtgaatgatgattcctctaaatgaagtacatgttgagatcaccttacc gttaaacagggtgaaagatacctgttgatggcaaaattttaaaggatgactgcacac gacgaattctatgttaacaggtgaattctatccctgttgagaagaattgttgatgactgt attggttcaacgatgaacaaaacgggtactattactatgacagcaacaaagtggcggtg gacacgcggttggcgaatttatttaaagtttgcgaagaagctcaaaagttctaaagcggt attcaacgatttggcagatattatttctggttatttcttctatcgttgttggtatcgca ctattaacatttctggttgcgttactttagttacaccaggtacatttgaacctgcactt gttgcgagtatttctggttctgctatttcttctcattgcttccatgcgcttgggttgcaccca acttctattttaggttaggtacttgcgctgctgctgaaatgggtatttatttaaagggtggc gagttgttgaacgcacacatcaaatgataccatcggtttagataagacgggtaccatt acaaatgggtcgctccagtcgtgacagattatcatggtgacaatcaaacgctacaactactt gctactgctgaaaaagattctgaacacccatttggcagaagccattgtcaattatgcaaaa gaaaagcaatttaatttaactgagacacacacatttaaagcagtaacctggccattggtatt gaagcaacgattgatcatcaccatatttgggttggttaacccgtaaatatgggtgacaa gatattagcttgcctaaagcatatttctgatgatttaacacattatgaacgagatggtaaa actgctatgctcatgtctgttaattattcattaaactgggtatcatcgagtgccagatact gtcaaaagatcatgccaaagatgctataaaacaaatgcatgatattggcattgaagttgct atggttaactggcgataataaaaaactgctcaagccattgcaaaaacagtaggcatagat actgttattgcagatattttaccagaagaaaaagctgcacaaattgcaaaactacagcaa caaggtaagaaggttgcgattggttgggtgacggtgtaaatgatgcacctgcatagttaa gctgatcatcggtatcgccattggttacaggtacagaagttgccattgaagcagctgatatt actattcttgggtggcgaacttgatgcttatttctaaagccattttagcaagtaaaagcaacc attcgtaatttctgcaaaactctatttgggcatcggctataatattgcccgtatccct atagctgcatgggcttacttgcgcatgggttgcgtggtgctgaatggcactaagttca gtaaggttgtgcacaaacgcacttagattgaaaaagatgcattagaaccacgcggttaa gatgcc</p>
15.	<p>atggttgattcaatttagagagactatagattatgccgtagaaaaataatgtcatttgcg gatattcatggttaaagaagaaatggaattaaagcggtaaatcacgtgatgaagtgcgagcg caaatgaaacaaaatttagatgtcatgagacgcagtaataaaggacgacaggtgat ggggttgaaggtgaacgggtacactggtcatgtagtctgctaaactacgtgattataat gaaacacatcatgcttctgctgatatgaatgattgacgcagtcacaaaggtgccattgca acaaatgaagtcattgctgcatgggtattatttgtgcaacgccaacagctggttctctg gggtaccattcccggtgcactttttaaattagaaaaaacacatgatttaacagaagagcaa atgattgatttcttattcacttcagcattgtttggcggtgctgtagcaacaatgcaagt gtagctggtgcaacaggtggctgccaagctgaagttggttcagcatctgcaatggcgca gctgcagcagtagctatattcgaggatcaccagaagcatccgggcacgctatggcatta gcgataagtaatttattaggtttagtttggatccagtagcgggaattgttgaaattcct tgggttatgagaaatgcaattgggttcgggttaacgctttaaattcagcagatttagcatta gcaggtattgaaagtagaatccctgttgatgaagttattgaagcaatggataaggttgggt cgtaaccttctgcatcattacgtgaaactggattgggtggactagcaggaacacacaaact ggcgaagcaattaaacgtaaaaacttggcacagctgaagatattggttaaaaaataat</p>

16. gtgaaaaacaatcttaggtacggcattagaaaacataaatgggagcagcatcagttatc
ttaggaacaatgatcgttgttgggatgggacaagacaagaagctgcagcatcagaacaa
aagacaactacagtagaagaaaatgggaattcagctactgataataaaacaagtgaacaa
caacaactgcaactaacgttaatcatatagaagaaactcaatcatataacgcaacagta
acagaacaacgtcaaaccgcaacacaaagtaacaactgaagaagcaccaaaagcagtaaa
gcaccacaactgcaacaaccagcaaatatagaacagttaaagaagaggttagttaaggaa
gaagcgaaacctcaagttaaggaaaacaacaaatctcaagacaatagcggagatcaaaaga
caagtagatttaacacctaaaaaggctacacaaaatcaagtcgcagaacacaagttgaa
gtggcacagccaagaacggcatcagaagtaagccacgtgtgacaagatcagcagatgta
gcggaagctaaaggaagctagtaacgcgaaaagtggaacgggtacagatgtaacaagtaaa
gtacagtagaaaattgggttctattggagggcataaacaatacaaaataaagtagaacctcat
actcaacactaaatgaagcgggtactaaaataaagttgaaatttgagaatgggtttacatcaaggt
gactactttgactttactttatcaaaataatgtaaatcagcatggcggtatcaactgctaga
aaagtaccagaaaattaaaaatgggttcagtcgtaaatggcgacaggtgaaagttttagaaggt
ggaaagattagatatatacatttacaataatgatatgaagataaggttgatgtaacggctgaa
ctagaaaatttaatttatttattgatacttaaaactgtacaaacttaaggaaatcaaaactata
actcaacactaaatgaagaacaaacttcaaggaattagatggttaataataaagatgggt
attgggaattatttatgccaatttaaatggatcgattgagacatttaataaagcgaataat
agatttttcgcatgttgcattttataaaccttaataatggtaaaacgacaagttgactgtt
actggaactttaatgaaggtagtaatcagaatggaaatcaaccaaaggttaggatattt
gaactactgggttaataatgaagcatagcgaagaggtgtatatgcaaatcagacagatcact
tctaaatttaagaaggtcacaagtaatatgagtgggaaatttgaaatttcaaaaataatgga
agctattcattgaatatagaaaaatctagataaaacttatgttggctcactatgatggagag
tatttaaatgggtactgatgaagttgattttagaacacaaatggtaggacatccagagcaa
ctttataagattattatgatagaggatataccttaacttgggataatgggttagtttta
tacagtaataaagcggaacggaaaatgggaaaaatgggtccgattattcaaaaataataaattt
gaatataaagaagatacaattaaagaaactcttacaggtcaatatgataagaatttagta
actactgttgaagaggaatatgattcatcaactcttgacattgattaccacacagctata
gatgggtggaggtgggatatgttgatggatcacattgaaacaatagaagaaacggattcatca
gctattgatctcgattaccatactgctgtggatagcgaagcaggtcacgttggaggatac
actgagtcctctgaggaatcaaatccaattgacttgaagaatctacacatgaaaattca
aaacatcacgctgatgttgtgaatatgaagaagatacaaacccaggtgggtggtcaggtt
actactgagcttaacttagttgaatttgacgaagaggtctacaaaaggtattgtaactggc
gcagtgagcgcatacaacagttgaagatcgaagaatatacaactgaaagtaactctg
attgaatttagtggatgaattacctgaagagcatgggtcaagcacaaggaccagtcgaggaa
attactgaaaacaatcatcatatttctcattctggttttaggaactgaaaatgggtcacggg
aattatgacgtgatgaagaatcgaagaaaatagccacgttgatattagagtgaaatta
gggtatgaagggtggcaaaaatagcggtaaccagtcattcaggaagacacagaagaagac
aaacctaaatatgaacaaggtggcaatatcgttagatatcgattttgatagtgtaacctcaa
attcatggtcaaaaataaaggtaatcagtcattcgagggaatatacagaaaaagcaaacct
aagtatgaacatggcggttaacatcattgatcgaacttcgacagtggtgccacattcac
ggattcaataagcacactgaaattattgaagaagatacaaaataaagataaaaccaagttat
caattcggtggacacaaatagttgactttgaagaagatacacttccaaaagtaagcggc
caaaaatgaagggtcaacaacaggtgaagaagatacaaacactccaatcggtgccaccaacg
ccaccgacaccagaagtaccaagtgagccggaaacaccaacgccaacacaccagaagta
ccaagtgagccggaaacaccaacaccacgacaccagaagtgccagtgagccagaaact
ccaacacggccaacaccagaggtaccagctgaacctggttaaaccagttaccacctgcca
gaagaacctaaaaagccttctaaaccagtggaacaaggttaaagtagtaaacctgttatt
gaaatcaatgaagaaggttaaagcagtggtcaccaactaaaaaaccacaatctaagaatct
gaactacctgaacaggtggagaagaatcaacaacaaaggtatgttgggtcggcggtta
ttcagcattctaggtttagcattattacgcagaaaataaaagaatcacaagca

17. ttgcatttaaggagagaatattatagtgaaaagcaatcttagatagcgacataagaaaacac
aaattgggagcgccctcagttatcttaggaacaatgacgttggttggaaatgggacaagaa
aaagaagctgcagcatcggaacacaaacaatactacagtagaggaaagtgagggttcagct
actgaaagtaaaagcaagcgaacacaaacaactacaaataacgttaatacaatagatgaa
acaaatcatcacagcgacatcaacttagcaacccatcacaatcaacacaagtaacaaca
gaagaagcaccgaaaactgtgcaagcaccacaaagtagaaaacttcgcgagttgatttgcca
tcggaaaaagttgctgataaggaaaactacaggaactcaagttgacatagctcaaccaagt
aacgtctcagaaattaaaccaagaatgaaaagatcaactgacgttacagcagttgcagag
aaagaagtagtggaagaactaaagcgacaggtacagatgtaacaaataaagtggagta
gaagaaggtagtgaaattgttaggacataaacaagatcgaatgttgtaaatccctcataac
gcagaagagtaaccttgaaatataaatggaaatttggaagaaggaattaaagcgaggat
tattttgatttcacattaaagcgataatgttgaaactcatggatctcacaacttcggttaa
gttccggagataaaaagtacagatgggtcaagttatggcgacaggaataaattggagaa
agaaaagttagatatacgttttaagaataatgtacaagaaaagaagatttaactgctgaa
ttatctttaaatctattttatgatctcacaacagtgacgcaaaaaggttaaccaaatgtt
gaagttaaatgggttgagactacggttagcaaaatatttaatatcatttttaggtgga
tcttagagataattggggagtaacagctaatgttgcaattgatacttttaataaagtagat
gggaaatttagtcatcttgcgtacatgaaacctaaacacagtcggttaagctctgtgaca
gtaactgggtcaagtaactaaaggaataaaccaggggttaataatccaacagtttaaggt
tataaacacattgggttcagacgatttagctgaaagcgtatagcaaaagcttgatgagtc
agcaaatttgaagatgtgactgataatagagtttagattttgatactaatgggtggttat
tctttaaacctttaataatttagaccacaaagtaaaaattatgtaataaataatgaagggtat
tatgatccaagtgcagcaacttagaatttcaaacacaccttttggatattataactat
tattatacaagtaatttaacttggaaaaatggcggttgcatcttactcctaataacgctcaa
ggcgacggcaagataaaactaaaggaaacctattatagaacatagtagctcctatcgaaactt
gaatttaaatcagagccgcccagtggaagaagcatgaattgactgggtacaatcgaagaaggt
aatgattctaaagccaattgattttgaaatcatcacagctgttgaaaggtgcagaaggtcat
gcagaaggtaccattgaaactgaagaagattctattcatgttagaacttgaaagaatcgaca
catgaaaattcaaaacatcatgctgatgttggtgaatatgaagaagatacaaaacccaggt
gggtgggtcaggttactactgagttcactagttgaaatttgacgaagattctacaaaaggt
attgtaactgggtgctgttagcgatcatacaacaattgaagatacgaagaataatacagact
gaaagtaacttgattgaactagtagatgaactacctgaagaacatgggtcaagcgcaagga
ccaatcgaggaaattactgaaacaatcatcatatttctcatctgggttaggaactgaa
aatgggtcacggtaatttatggcggtgattgaagaatcgaagaaaatagccacgtggatatt
aagagtgaaattaggttacgaaggtggccaaaatagcggttaactcagttcttgagggaagac
acagaagaagataaaaccgaaatatgaacaaggtggcaatatcgtagatattcgatttcgat
aggtacctcaaatctcatgggtcaaaaataatgggttaaccaatcattcgaagaagatacagag
aaagacaaacctaaagtgaacaaggtggtaatatcatgatatcgacttcgacagttgtg
ccacatatctacggattcaataagcacactgaaatttatgaagaagatacaaaataaagat
aaaccaaatattcaattcgggtggacacaaataggtgtgactttgaagaagatacacttcca
caagtaagtggtcataatgaaggtcaacaaacgattgaagaagatacaaacacctccaatc
gtgccaccaacgccaccgacaccagaagtaccaagcgagcggaacaccaacaccaccg
acaccagaagtaccaagcgagccggaacaccaacacccgcaacgagaggtaccaact
gaacctggtaaaaccaataaccacctgttaaagaagaacctaaaaaaccttctaaccagtg
gaacaaggtaaagtagtaaacacctgttatgaaatcaatgaaaaggttaaagcagtggtg
ccaactaaaaaagcacaatctaagaaatctgaactacctgaaacaggtgggaagaagatca
acaaacaacggcatgtgttcggcggtatttatagcattttaggtttagcgttattacgc
agaaataaaaagaatcacaagca

18.	<p>atgcaaatgagagataagaaaggaccggtaaataaaagagtagattttctatcaaaataaa ttgaataaataattcaataagaaaatttacagttggaacagcatctattttaattggctca ctaatgtatttgggaactcaacaagaggcagaagcagctgaaaacaatattgagaatcca actacatataaagataatgtccaatcaaaagagtgaaagtgaagaagtaacaaacaaa gacactgcaccacaggggtgtagaagctaaatctgaagtaacttcaacaagacacaatc gaacatgaaccatcagtaaaagctgaagatatatcaaaaaaggaggatcacccaaagaa gtagctgatgttgctgaagttcagccgaatcgctcagtcactcatacgcagagacacct aagggttagaaaagctcgcttctgttgatgaaggctcttttgatattacaagagattctaaa aatgttagttgaatctaccccaattacaattcaaggtaaaagaacattttgaagggttacgga agtgttgatatatacaaaaaaaccaacagattttaggggtatcagaggttaaccaggtttaat gttggttaataagaaagtaattgtttgtaggagctttacaattaaaaataaataagatttt agtaaggatttcaatttttaaagtttaggtggcaataaccatcaatcaaataccacaggt gctgatgggttgggggttcttatttagtaaaaggaatgcagaagaattttaactaatggt ggaaatccttggggataaaaggcttggttaattcaggcggatttaaaattgatactggatac atttatacaagttccatggacaaaactgaaaagcaagctggacaaaggttatagaggatac ggagcttttggtaaaatgacagttctgttaattcacaataaggttggagaaaataatgat aaatcaaaaactaattttttaaactatgcggacaattcaactaatatcagatggaaaag tttcatgggcaacgtttaaatgatgtcatcttaacttatgttgcttcaactggtaaaatg agagcagaatattgctggtaaaacttgggagacttcaataacagatttaggtttatctaaa aatcaggcatataaatttcttaattacatctagtcagaagatggggccttaatacagggata aactcaaatgcttgatgagaactgacttgaagggttcagagtttacttttacaccagaa gtgcacaaaacaataacagaatttagaaaaaaaagttgaagagattccattcaagaagaa cgtaaatttaattccggatttagcaccagggcagaaaaagtaacagaagaaggacaaaaa gggtgagaagacaataacgcacacacactaaaaaattccatttaactggagtaattattagt aaagggtgaacacaaaagaagattacaaaagatccgatttaataagatttaacagaatccgga cctgaacaaatagcgcagggtcatcgagacgaatttgatccgaagttaccaacaggagag aaagaggaagttccaggtaaacagggaatttaagaatccagaacaggagacgtagttaga ccgcccgttcgatagcgttaacaaaataggacctgttaaaaggagactcgattgttagaaaaa gaagaratttccattcrgaaaagaacgttaatttaattccggatttagcaccagggcagaa aaagtaacaagagaaggacaaaaagggtgagaagacaataacgacgccaaacactaaaaat ccatttaactggagaaattatttagtaagggtgaatcgaaagaagaattcacaaaagatccg atttaattgaatttaacagaatacggaccagaacgaataacaccaggtcatcgagacgaattt gatccgaagttaccaacaggagagaagaaggaagttccaggtaaacagggaattagaat ccagaacacaggagacgttagtagaccacgggtcgatagcgttaacaaaatattggacctga aaaggagactcgattgttagaaaaagaagaattccattcaagaagaacgttaatttaatt cctgatatttagcaccagggcagaaaaagtaacagaagaaggacaaaaagggtgagaagaca ataacgcagcccaactaaaaaattccatttaactggagaaattatttagtaagggtgaatcg aaagaagaattcacaaaagatccgatttaattgaatttaacagaatacggaccagaacagata acaccagggtcatcgagacgaatttgatccgaagttaccaacaggagagagaaggaagtt ccaggtaaacagggaattagaatccagaacaggagatgttagtagaccacgggtcgat agcgttaacaaaatattggacctgttaaaaggagactcgattgttagaaaaagaagaattcca ttcgagaagaacgttaatttaattcctgatttagcaccagggcagaaaaagtaacaga gaaggacaaaaagggtgagaagacaataacgacgccaaacactaaaaaattccatttaactgga gaaattatttagtaaaagggtgaatcgaaagaagaattcacaaaagatccagtttaattgaatt acagaattcgggtggcgagaaaaatcccgcaagggtcataaagaattctttagtccaaactta ccaacagatcaaacgggaaaaagtaaccaggtaaacagggaattcaagaattccagacacagga aaagttagtcgaagagccagtgatgatgtgatttaaacacggacacaaaaacgggttacacca gaaacaaaaacagtagagataccggttgaacacaaacgtgagtttaattccaaaattacaa cctggtgaagagcagtgaaacagaaggacaaccagggaagtaagacaatcacaaacacca atcacagtgaaacccatttaacagggtgaaaaagttggcgagggtcaaccaacagaagagatc acaaaacacccagtagataaagattgttagagttcgggtggagagaaacaaaagattccaaa ggacctgaaaaacccagagaagccgagcagacaaactcatcaagttggccagtaaatcct aacaatccaggatttatcgaaagacagagcaaaaacaaatggccagttcattcaatggat aaaaatgataaagttaaaaaatctaaaatttgtaaaagatcagtagcttaatacagagaaa aaacgagcagaattaccaaaaacagggttagaaagcagcgaaaaagggttgatctttagt agtataattggaattgctggatttaattgttattggctcgtagaagaagaat</p>
19.	<p>atgaaaaataaataatctcgaagttgctagttggggcagcaacaattacgttagctaca atgattttcaaatggggaagcaaaagcgagtgaaaacacgcaacaaacttcaactaagcac caaacacactcaaaaacactacgttaacagatcaacaaaagctttttatcaagtattacat ctaaaagggtatcacagaagaacaacgttaaccaatacatcaaaacattacgcgaacacca gaacgtgcacaagaagttattctctgaatcacttaaaagacagcaagaacccagaccgagct gttgcaacacaaaacgctttttacaatgttcttaaaaatgataacttaactgaacaagaa aaaaataattacattgcacaaaattaaagaaaacccctgtagaagccaacaggtttgggtga gaatcagtaaatcttctaaagctaaagaacgtcaaaaatttgaaaaatgcggaataaagca attaaagatttccaagataacaaagcaccecacgataaatcagcagcatatgaagctaac tcaaaaattacctaaagatttacgtgataaaaacaacccgctttgtagaaaaagtttcaatt gaaaaagcaatcgcttcgtcatgtgagcggtgtaaatcagcaaatgatgcaattctcaaaa ttaaattgaaaaagattcaattgaaaacagacggttagcacaacgtgaagtttaacaaagca cctatggatgtaaaagagcatttacagaacaaatttagacgcattagttgctcaaaaagat gctgaaaaagaagttggcgccaaaagttgaggctcctcaaatcaattcaccacaaaattgaa aaacctaagtagaattcaccaaaagttgaagtcctcaaatcaattcaccacaaaagttgag gttctctcaatttaattattaggttactaccaatcattaaagattcatttactatggt tacaagattttaacagatacttataaaagctataaagaaaaatgatagcaaggtac tactataactacgtactataatacaaaaggtgcgatttgatcaaacagttataacagttacta ggtagtggttctaaatcttactacacacattgaaagttgatgataaaaacggctactta gctaaatcatatgcacagtaagaactatgtaactgagttcaatcaatctggttaagta ttataactttctacaaaacccaacatttagtaaaaacagctattaaagctcaagaact gcacatcaatcaaaaatacattaaagtaatttattatcattctggaaa</p>

20.	atggcgtatatttcaaaagagaaaaagaggatgtatcgttgtagaagaacatttaa gcgtttgttaattgataaagatgagagtggttaaagtgacaccaactttcaacaattatcg cctactgatttacctaaaggagatgtgctgattaaagtacattactctgggtataaattat aaagatgcttttagcgactcaagaccataatgcagtcgtaaaatcgatcctatgattcca ggaatagatttagctggaaacaattgttgaaatcggaagcaccaggtttgaaaaaggagaa caagtaattgtaacgagttatgacctaggtgtcagccattatggcgggttttagtgaatat gcgcgtgtaaaaatcagaatggattatcaagcttctgatactttaacattagaagaatca atgataatggcacagctgggtatactgcccgttttagcaattgaaagacttgaaaaagtt ggaatgaattgaaagatgggtcctgtactcgttcgcgggtcctcaggtgggtgcggtact ttagcagtagtactgcttaattgaacttggttataaagtattcgcgaagtacaggttaacaa gatgttagcgatcaattacttgaacttggtgcccagaagtattcgatcgacttctcgtt gaagatgatcataaaaaagccactcgcatcatcaacttggaagcttggttagaccctgtt gggtggcgaaggtatataattggttacaagaagctttaaatactagtggttcaattgcagtt attgggtatgactgcgggttaatacttatactaatctgtattcctcacattttaagaggt gtaaacattttaggaattgactcgggtatttactgctatgaattaaagacgcgcgtttgg cgtcgtctgcgaagaatttaattgcttgaattttacatgagatcaagcaagttattaca tttgatgaacttccagaacaacttaacaaagtaattaaacatgaaaataaaggcgcat gttatcgatttcggtgtagataaa
21.	atgaaaaaattagtaacgcaactacgttaacagcaggaatcgccacagcatttagtaggt caagcatatcatgcagatgctgctgaaaaattatacaaatatacaacaactataactacaac acgactcaaaactacaacgactacgacaactacgacaactacatcatcaatttcacattct ggttaacttatcacactgcaggacaattgtactgggtatgtatagataaagttggcggagaa atcgggttctacttggggaatgctaataatgggctgctgctgcacaaggtgctgggttc acagtaaatcatcacacttctaaaggcgctatcctacaactctctgaaggaccatttggt cacgttgcatatgtagaaagtgtaaacagtgatggttcagttacaatttcagaaatgaat tatagtgggcgacctttctcagtaagttctagaactatttctgaagtgaaagcaggtaac tacaactacatccatatt
22.	atgaagaaaatcgctacagctactatcgcaactgcaggattcgctacaatcgcaattgca tcaggaaaatcaagctcatgcttctgagcaagataactacggttataatccaaacgacca acatcatatagctatacttactatctatgtagcacaaggttaactaccattacacatggaaa ggtaactggcatccaagtcaattaaaccaagataatggctactacagctattactactac aatgggttacaataactataacaattacaacaacggttatagctacaataactacagccgt tacaacactactcaaatataatcaatcatataactacaataactataatagttacaac acaaacagctacagctactggtgggttaggtgcaagctacagcacttcaagcaacaatggt caagtaactacaactatgggtccatcatcaaatggcgggtcaatctcaagtggttatact tcaggacgtaacttatacacttctggtcaatgtacatactacgtatttgatcggttaggt ggtaaaatcggttcaacttggggcaatgcaagtaactgggctaacgcagctgcaagagct gggtacacagtgaaacaatacaccaaaagctgggtgcaattatgcaaaacactcaaggtgca tacgggtacgttgcatagcttgaaagtgttaacagcaatgggttcagtaagagtttcagaa atgaactatggttatggcccaggtgttgtaacttcacgtacaatctcagctagccaagct gctgggtataacttcattcac
23.	atgtcaatgacatatagaataaagaaatggcaaaaattatccaccattacgttattaatg gtcgggttgatcttctgaatgggtggtgaattcagaagtggttgaataaacatcaaatcgct gctggtgatacgaatgttcaaacgcccagattatgaaaaattgaggaacacatggctggac gttaactatggttatgataagtagatgagaataatccagatagaagaagaagtttgat gctacagagaagaggcgacgaatttactcaaggaaaatgaaaactgaaagtggtaggaaa tacttgggtcaggagcggaaccccttgaactaattcttctcatatgactcgtaacctat cgtaatatgagaaaaatcgcaagcgatgaggaatcctaaaaccactttaaatactgac gaaaaataagaagaagtgaaagatgcccctgagtggtgctgataaaaaatgcatatggaaaa gaaccagataaaaaagtaaaagaattaaagtgaagatttactaaaacactggcaagaat accaacttaaatgggtgggttatgaaattggaacacctaataatcatacaaatacgctt atattgctgaatgatcaattttcaaatgaagaaagaaaaattcactgccctatttaa agcttccgccagatagtgacaaaaattatctctctgtaggaaaagctgaacttgctaaa ggcggaaaatctagtagacatttctaaagtgaaaacttttagaatgtattatgaagaagat aaagatatagtgaaaaagttctatagattcatttaataaagctctcactwaggttcaagat tcttggcactggtaagaacgtaattggattttataaagatggctcttcatattgatcatcaa gacgttccatacactggtgcttatggcgttgtagctcttagaggggatttctcaaatgatg ccgatgataaaaaaacaccttttaattgataaaacccaaaatgatacaaccttaaaagtca tggattgacgacggatttatgcccactcattataaagtggaatgatggatttatcacga ggtagagctatcagtcgtgaaaaatgaaacagctcactcagcatctgcaacagtaattgaaa tcattgttgagattaaagtgaatgagtgccatggatgattcaacaaaagctaagtataaaagatt gtcaaatctcagtagagtcagattcaagttataaacaataatgatatttaaatctcatat tcggacatagataaaaatgaagctttaaataacagataacagatttctaaaaacggatta acacaacaacttaaaataataatgacatggatcgtgtcacctatcatacaaacagactta gactttgcatttggtttaagtagacgtcgaaaaacgttagcagcgtatgaaagtatcaac ggagagaatttaaaaggttggcacactgggtgctggaatgcttatttatataacagcgat gtcaaacactatcatgataacttctgggtgacagccgatgataaacggtttatcagggtaca acaacttttagacaatgaaatattaaaagatcaggatgataaaaagtcagtaaaaactttt gttggcggaaacaaaagttgatgaccaacatgctagtatcggaatggattttgaaaatcag gacaaaactttaactgcaaaaaatcatatttcatattaaacgataaaaattgtcttctta ggaaactggcattaaaagtactgattcatcaagaatccagttacaacgattgaaaatcgc aaagcgaatgggtatagcttatatacagacgataaaacaaacacaaatctgataatcag gaaaacaattcagttcttttagagtcacacagataccaaaaagaacatcgggttatcatttt ttaaacacacggaaaaataactgtaaaaaaagaaagtcatactggtaagtgaaagaaata aataaaagtcaaaaggtacacaaaaaactgatgagattatgaagtaactcaaaagcat tctaattctgacaaataaatggatattgtgttgatccaggcttatctaaagatgctttt aagcaaaaaaagatgaagttaactgtcgttaagcaagaagatgacttccacgtttgtgaaa gataatgaatcgggttgggtgggtgttaattatagtaatagcactcaaaacttttgacatt aacaacactaaagtgaagttaaagccaaaggtatgtttatacttaaaagaaagatgat aacacttatgaatgtagcttctataatcctgaatctacaatttccgcttcagatattgaa tctaaaatttcaatgaccggttactctattacaaacaaaatcagtcgacttctaattgaa tccggcgtgcactttgaattaaactaaa
24.	gtgaatgatttgaagcaatttctatatattgcgttagtatgtggtgtgtagcaggtcctt gggtgcttctcatatataccgcagtatccgagcatgacaattccacgtatagtagctatt ttaggaattatcagtgctatggtgacttttaaagacaagcaaatcagcgctcattaaag tttagcgcattgttaattaatgtgctgccattatgcgggtacctttgtagcttcaaat

25.	gtgtctcgtgaaatgtcatatcattgggttaagaaatgttactttcaacaagtatttta atttttaagtagtagtagtttagggcttgcaacgcacacagttgaagcaaaaggataactta aatgggagaaaaaccaactactaatttgatcataatataacttcaccatcagtaaatagt gaaatgaataataatagagactgggacacctcaggaatcaaatcaaacgggtaatgaagga acaggttcgaatagtcgtgactaatcctgattcgaataatgtgaagccagactcaaac aaccaaaaccaagtacagattcaaacccagacccaataacccaaaacccagtcggaat cctaaaccagatccagataaccggaacccaaacccggtccaaaaccagaccagataaa ccaaagcccaaatccggatccaaaaccagatccagataaccggaacccaaatccagatcca aaaccagaccagataaacccaaagcccaatccggatccaaaaccagatccagataaacca aagcccaaatccgaatccaaaaccagaccctaatagcccaatcctaacccgtcaccagat cccgatcaacctggggatcccaatcattctggtggctcgaaaaatggggggacatgggaac ccaaatgtctcagatggatcctaatcaaggtcaatggcaacccaaatgggaatcaaggaaac tcacaaaatcctactggttaattgtatcccaacgatttttagccttgccaaatggg gcttacagatataatccgtatattttaaatcaaatataaagtgggcaagattatgga gaagttactgtgaagacattataatattatcgaaaaacaaatctcagcggaatgca tatttaaatggtacacagcaatcgaattacttttagattccaatatttcaatccattg aaatcagaagaaggtactatcgtaatttagatgaacaagtagctcgcaattactggtgaa attggatcaatgcccagatttgaaaaagcccgagataagccggatccaaaacacgcctca tttgaaccgatgaaaaagacgattttacagtagttaaaaaacagaagataataagaaa agtgcgtcaactgcataatagtaaaagtgggtagcaattgtatgtctatgattggtgga tttccaatcattgctattcttatttgaagcgaaataaaaagaaaaataaaaacgaatca cagcgacga
26.	atgaaaaataaaaaacgtgttttaatagcgtcatcattatcatgtgcaattttattgtta tcagcagcaacgactcaagcaaatcagctcataaagactctcaagaccaaataagaaa gaacatgttgataagctcacaacaaaagacaaacgtaattgtactataaagataaaaaat tcacacgacccggatgataattgggaaaaacggtaaaatcacaacacgaactgaaacagta tatgattgagaaaaacaaataactcacaattttacaattcgactttatcgatgacccaact tatgacaagaatgtattacttgttaaaaaacagggtcaattcattcaaattttaagttt gaatctcataaagaagaaaaaatccaattgggttaagtaaccaagtgtgtagcattgta gattttcaagttaaaaagaaatcgtaaaactgaaataatagaccaattgcccgaataaaa atctcaactgcacaaagttagacagtagcattttcatatagctcaggtggtaaatcgattca acaaaagggtattggacgaacttcacataatagctactccaaaacgattagttataatcag caaaattatgacacaaatgccagcggtaaaaataaactggcattgacacgtggtcagtt attgcgaatgacttgaagtattggtggagaagtgaaaaatagaaatgtgaattattattc tatagaatacagagaattgctactgtagaaaacccctgaactaagctttgctccaaatat agatacccgacttagtaagaagtggcttaattccagaatttttaacttatttatcatt gaaaagtcaaatgagaaaaacgcaatttgaagtaacatcacacagaaatcaagataatttg aaaaacagacattggaatacattatgcacctccaatttttagaaaaataaagatgggtcaa agataattgtcacttatgaagttgattggaaaaataaaaacagttaaagtctgtgataaa tattctgatgacaataaacctttataaagaagga
27.	atgtatacagctacagctacaacaagtgtatgtcaaaaaatattactcaaagcttaca tttaatttcttaactgaacctaatattatgataaagaacagttattataaagcaaaaggt acaattggtagtggtttgagaatttttagaccacaaatgggtattggaatagtagacattaaga tgccctggatcttattcagtttcaattcaaaatgttgatgacaacaacaatacaaatgtg actgactttgacacaaaaatcaggatgaatcaagagaagttaaatatacgtatgggttat aaaacagggtggagatttttcgattaatcgtggaggcttaactggaaattattacaaaagag agtaattattcagagacgatttagttatcaacaacccatcatatcgtacattacttgatcaa tctacgtcacataaagggtgtaggttggaagttagaagcacatttgataaataatggga catgaccatacagagacaatttaactaatgtagtgataatagaactaaaagtgaattttt tctttaacacgaaatggaaatttatggcgaaagataatttcacacctaaagacaaaatg cctgtaactgtgctggaagggttttaattccagaatttttagctgttatgtcacatgataaa aaagacaaaggtaaatcacaaattgtgtgtcattataaaagatcaatggatgagtttaa atagattggaatcgccatgggttctggggctattggtctggtgaaaccatgtagataaa aaagaagaaaaattatcagcattatagaaagttgattggaagacacataatgtgaagttt gtaaagtaacttaattgataatgaaaagaaa
28.	gtggtgaaatttatgaattatccaaatggtaaaccatatcgtaaaaatagtgtatagac ggagggaaaaagaccgctgccttttagtaatttagtagtattggtggacgtggtagtcactt gaaaaagatatcgaaacattcaaatacgttttatcttaaaagcgacattgcagttattcac aaaaagcctacgccagtagcaaatagtttaattgtcaactatcctaagcggagtaagctgtg attacgaagcttattttcgtacaccttcaacaaactgattacaacggcggtttatcaaggt tattatattgatttgaagcaaaaggaactaaaaacagacgtcctttcccttaataat attcatgaccatcaagtcgaacatagaaaaatgcataacacaaaaggattgtgttt ttaatgattcgttttaaaacgctagatgaagtttatcttttaccctattcaaaattcgaa gtattttggaagagataaagataatattaaaragttctataacagttgtagaaatcga aaaaatgggtaccatattccttatcagtatcaaccaagatttagactatctaaaagcagtt gataagttgataattagatgaagtgaggacgcgta

29.

gtgaatacacacgaaagcagcattacatgggtgatgtgaagttacaaaatgataaagatcat
gctaagcaaacgggttagtcaatttagcacatcttaaacatgacacaaaacataggaagat
acgttaatttgatagtgaaacaactagaacagcaggttaagcaagatttgatgaagcaca
gcattagatcaacttatggatgcattacaacaaagatttgctgacaaagatgcaacacgt
gcgagcagtgcatatgtcaatgcagacccaataaaaaaacatcctatgatgaagcagtt
caaaatgctgagttcatcatgcaggatttaataatccaactatcaataaaggtaagtta
tcaagtgagactcaagcagtaatatcatctaaaaatgcattagatgggttggaacgattta
gctcaagataagcaaacgtctggaaattctctaaatcatttagatcaattaacaccagct
caacaacagcgctagaaaaatcaaatataatgcaacaactcgtggcgaagtagcaca
aaatttaactgaagcacaagcacttaaccaagcaatggaagctttacgtaatgacattcaa
gatcaacagcaaacggaagcgggttagcaagtttatcaatgaagataaacacacaaaagat
gcttaccagcagcagttcaaaaatgcaaaagatttaattaatcaaacatacaatccaacg
cttgataaagcacaagttgaacaattgacacaagctgttaaccaagctaaagataacctta
cacggtagtcaaaaacttgacagcagtaaaacaacatgcgggttactgatttaaatcaatta
aatgggttgaataatccgcaacgtcaagcacttgaagccaaaataaacacagcagcaact
cgtggcgaagtagcacaacaaattagctgaagcaaaagcgttgatcaagcaatgcaagca
ttacgttaattagttatcaagatcaacaacaaacagaaatcgttagcaagtttatcaatgaa
gataaacccgcaaaaagatgcttaccagcagcagttcaaaaatgcaaaagatttaattaac
caaacaggttaattcaaacactcgacaaatcaaaagtagaacaattgacacaagcagtaaca
actgcaaaaagataattctacatgggtgatcaaaaacttgctcgtgatacaacaacagcagta
caaacgtgtaaatgcatgcaaaaacttaaatcatgcacaacaacagcatttaactgatgct
ataaatgcagcgcctcaagaacagaggttgacacaactggtcaaacgtctactgaactt
gatcacgcgatggaacattgaaaaataaagttgatcaagtgaatacagataaaggctcaa
ccaaattacactgaagcgtcaactgataaaaaagaagcagtagatcaagcgttacaagct
gcagaagcattacagatccaactaatgggttcaaatgcgaataaaagcgtgttagacca
gtatttaactaagcttcaagaaaaagaagaaatgagtttaattggaatgagagagtcgctgaa
gctaaaacacaaagcgaacacaaactattgaccaatttaacacatttaaatcgtgatcaaat
gcaacttgctaaaacaaacattgatcaagcagcgaacttcaaccaatttgctgaattagta
gatcaagcaacgcaattgaatcaatctatggatcaattacaacaagcagtttaattgaacat
gctaacgttgagcaaacgttagattacacacaagcagattcagataaaacaaatgcttat
aaacagcttattgctgatgctgaaaaatgattgaacaaaaatgcgaatgaagcaaacagtg
gatcaagcacttcaaaaatattttaaattgcaaaaacagcatttaattggtgatgaacgtgta
gcacttgctaaaacaaatggtaaacatgacatcgacaaattgaatgcattaaacaaatgct
caacaagatggatttaagggtcgcatcgatcaatcaaacgattttaaatacaatccaacaa
attgtagatgaggttaaggcacttaactcgtgcaatggatcaattgtcacaagaatcact
gacaatgaagcagcagcaaggttagcagcaactatgtcaatgcagatacacaagtcacaa
caagtatatgatgaacgggttgataaagcgaacacagcacttgataaatcgactggtcaa
aacttaactgcaaaaacagttatcaaattaattgatgagcagcactgcagctaaagaaagca
ttaaatggtgaagaagacttaataatcgtaaaagctgaagcattacaagaattggatcaa
ttaaacacattcaacaatgctcaagacaaattagcaatccaacaaatataaatgctgaa
acgttaataaagcatctcgagcaatttaataagcgaactaaattagataatgcaatgggt
gcagtaacaacataatattgacgaacagcacttggtgttatcagcagcacaacattacata
aatgcagatgacaatttgaagcaaatattgataatgcaattgccaatgcagcagcagatgag
tagataaagtgcaaggttaattgcaattgcaaaagctgaagcagagcaattgaacaaaaat
attatcgatgctcaaaaatgatttaattggaagacaaaaccttgcaaatgccaagataaaa
gcaaatgcggttggtttaattcggttaaatggatttaatacaacagcaacagatcttgacat
aaagcaatttaacaatgcccatactgtatcgatgtaacagatattgttaataatcaaat
gacttaaatgatgcaatggaacattgaacatttagttgacaatgaaattccaatgca
gagcaaacgtgcaatttaccacaaacgctgacgataatgctaaaaacaaacttcgatgatgcc
aaacgtctagcaaatatatttgctaaatagtgataacacaaatgtgaatgatataatggc
gcaactcaagcagtcattgatgcaatccaataatcttaattggtgatcaacgatacaagat
gctaaagcaaggaatcaatcttaataatcaagctttagcttaataagctaaagaaatc
gaagcttaaatgagcagcagatcaagcaagccttatgcaaaaaataaagcagaagaattg
gcaaacagcatcatcaacaacatttaataagcaacagtaattcaggctgtatctcaagtt
caaacagcaggaacacacgcgattgaacaagtgcatgccaatgaaattacaaaagcaaaa
attgagtgcaataaagacggttgataagcaagttcaagcatttaattgagcaaattgatcga
aatccaatctaacagataaagaaaaaacagcacttaagatcgatttaatacaatattt
caacaaggtcataacggcatttaacaatgcgtagactaaagaagaattgaacaagccaaa
gcacaacttgccgaagcattacaagacatcaagatttagtgaagcttaagaagatgagc
aaacaagatgttgataaacaagttcaagctttaaattgacgaatcgatcaaaaatccaat
ctaacagataaaggaacaaagcacttaagatcgatttaatacaatatttcaacaaggt
ctatargcattatcaatgcgtagacaaaagaagcaattgaacaagcaaaagaaagcgttta
gcgcaagattgcaagacatcaagatttagtgaaagctaaagaagatgcgaaaaatgat
attgataaacgtgtacaagctttaaattgacgaatcgatcaaaaatccaatctaacagat
aaggaaaaaacagcacttaagatcgaaatttaatacaatatttcaacaaggtcataacgac
attacaatgcgctgactaaagaagaatttagcagggcaaaagcacaacttgcaacagca
ttgcaagacatcaagatttagtgaaagctaaagaagatgcgaaaaatgcaataaaagcc
ttagctaatgcgaagcgtgatcaaatcaattcaaatccagatttaacacctgagcaaaaa
gcaaaagcgtcacaagaaattgacgaagctgaaaaacagcagcacttaaaaacgttgagaat
gctcaaacatagatcaattaaatcgaggatttaacttaggttagatgacattagaat
acacatgtatgggaggttgatgaacaacctgctgtaaatgaaatttttgaagcaaacct
gagcaaatcctagttaattggtgaactcattgtacatcgtagatgacattacagaacaa
gatattcttgacacataaacttaattgatcagctttagcagaagtcacgatcacacca
tcaactgcaacgatttctgatagcttaacagcaaaagttgaagttacattgcttgatgga
tcaaaagtgattgttaattgctgtaaaagtttgtagaaaaagaatttgtagatgacaaa
caacagggcaattgaaatcaatcgaaaatgcggcacaacaaaagatttaataaatcaataat
agtgtagacttaacactggaacaaaaagaagcgtgcaattgcagaagtttaataagcttaa
caacaagcaattgatcatgttaacaatgcacctgatgttcatcagttgaagaattcaa
caacaagaacagcagcatattgaacaatttaattccagaacaaattacgattgaacaagca
aaatcaaatgcaatttaaatcgattgaagatgcaattcaacatattgattgaaatcaaa
gctcgtactgatctaacagataaagagaagcaagaagctattgctaaagttaaatcaatt
aagaacaaagcaattcaacgatttcaacgtgcgcaagcagatcgatgaataagtgagcaa
ttggaacaaatttaagctcaaatgaaagcagctaatccaacagcaaaagaaactagctaaa
cgcaagcaagaagcttagtagaattaaagacttttcaaatgaaaaataaattagttatt
cgaaatagtgaaattggcacagctgatgaaaacaaagcagcaatgaaatcaaatcaacgaa
atttgcttgaacaaatttagagatttaataatgcgcatacattacagcaagttgaggt
gcattgacaatgggtattgctcgaaatttcagcagatacaaatgtaacattcgatcgctgct
aaacaatcgtaagcttggaattgaatcttaatagccatttaacaattgggttaaggaaact
gcaaatcactatttaacagttcgactattggacataaaaaagaacttgatgaagatgat
gacattgatccacttcatatgcgctcacttagttaaatttcggttaatttataaaac
gctattggtggtgggttatctctggtttacttagctagtttctggttcttcaattgccaac
gctcgtcgttaagaagatgaagaggaagaaattagaataaagagataataataaagattca
ataaaagagacttttagacgatacaaaaacatttaccactttatttgcgaacgctgcgaga

```
aaagaagatgaagaagatgttactgttgaagaaaaagattcgctaaataatggcgagtca
ctcgataaagttaaacatacgccgttcttcttaccaaaacgtcgtcgtaaagaagatgaa
gaagatgtggaagttacaaatgaaaacacagatgaaaaagtgttgaaagataacgaacat
tcaccactcttattcgcaaaacgacgcaaagataaagaggaagatgttgaaacaacaact
agtattgaatctaaagatgaggacgttcctttattattggctaaaaagaaaaatcaaaaa
gataaccaatccaagacaaaaagtcagcatcaaaaaatacttctaaaaaggtagcagct
aaaaagaagaaaaagaaagctaagaaaaataaaaaa
```

30. atgaatcaggaagttaaaaacaaatattttcaatcttaaaaattacgtttgctacagct
ttatttatttttgtagcaatcacattgtatcgggagttatctgggtattaactttaagat
acgttgggttgaatttagtaagattaccgtatgtccttagtggtactttattgggtgg
ggggcatcgcttgttattctatcaatgtatgtgattttatctagagctttaaaaatg
gatatatccttaggcaaaagttttaagagtaagttatatcatcaatgcattgaatgcgatt
gtaggtttcgggtggctttattgggtgcaggcgttagagcaatgggtttaaaaaactatcgc
catgataaaaaagaaattagttcactttatatccttaacttatttcaatgttgacaggt
ttaagcttattatcatgtctaattgtattccatgttttcgatgcattcttaactcttagat
aagattacatgggtaagatgggtattatattgtatgttcatttttcttaccattattcatt
atttattcaatgggttagaccaccgataaaaaacaatcggtttgtaggattgtactgcact
ttagtgctgtgtgttgaaatgggttagcagctgcagttgtattatatttctgtgggttaatt
gttgacgctcatgtatcatcattgtcctttattgcaatatttatcattgctgcattatca
gggttagtcagctttattcctgggtgttttcggcgctttcgatttagttgtattactagga
tttaaaacttttaggtgtccctgaggaaaaaglattttaatgctacttctatatcggtttt
cgctactattttgtaccggtaattattgcattaattttatcatcatttgaattttggtaca
tcagctaaagaagtacattgagggatctaaatactttattcctgtcaaaagtgttacgtca
tttttaattgtcttatcaaaaggatattattgtcaaaattccatcattatcatagcaatt
ttagttattctttacaagtatgatctttttgttaaaacttaacgattgtttacgatgct
ttatatgatggaaatcaccttaacgtatttatctattggcaattcactactagtgcttgt
ttattacttttactgaatgtatgttggtatttataagcaagtagacgtgccattatcttt
gctatgatttcaattttatcaatcacagtgccgacattcttcaactacgcttcataatt
ttaataacatgggttagctattatttttggctctgcttattgttagctttccgtagagcacgt
agggtgaacgcccagtaagaatgagaaatattgttgcaatgcttttttccagtttattt
attttatattgttaaccataattattgtgctggaacgttatatgcattagatatttatacg
attgaaatgcatacatctgtattgctgctattacttctggcttacgattttaatcatcgct
atcatcataggtatgattgcatgggtgttttgattatcaatttagcaaaagtacgtatttct
tctaaaattgaagattgagggagatttataatcagtagcggcggttaattttgagtcac
ttgatataatgtgtgcaaacgagtttttcaactaatgaaaaataaacagcatttttaatg
tatcgtttataaagcaagttcatttagtggttcttggagatccgttaggtgatgaaatgcc
tttgatgaattgttagaagcattctataaattacgctgagtttaggttatgatgttata
ttctatcaagttacagatcaacacatgccttttatatcataatttcggtaaccaatttttc
aaattaggtgaagaagcaattattgatttaacgcaattttcaacttcaggtaaaaaacgc
cgtggatttagagcgactttaaaataaattcgatgaacttaattttcggtcgaaattatt
gaaccaccgttttcaactgaatttataaatgaacttcaacatgtaagtgaatttatggcta
gataatcgtcaggaaatgcatttctctgttgggtgaatttaatgaagaatacttatctaaa
gcgccaatttggtgaatgcgaaatgaagaaatgaagtaattgcattttgtagtttaatg
ccaacatactttaatgatgccatttcagtcgatttaatttagatgggttgcagagtttagat
ttaccattaatggatgggtctatacttgcataatgttactttggagtaaaagaacaaggttat
acaaaaatttaatatgggtatggcaacgttatcgaaacttgggtcaattgcattattcatat
ttaagagaacgacttgcaggcgtgtctttgaaacatttcaacggtctatatcggttccaa
ggattacgtcgtttataaatctaaatataatccgaattgggaaccacgcttttagtttat
cgtaagataattcgctttgggaatcactttctaaagttaatgcgtgtaatacgtcacaaa

31.	<p>atgggtgcattaaacgcttggtaggttcagcagtcactgcacatcaagttcaagcagctgag acgcacaaagatcaaaactactaataaaaaacgttttagatagtaataaagttaaagcaact actgaacaaagcaaaaagctgaggtaaaaaatccaacgcaaaacatttctggcactcaagta tatcaagaccctgctattgtccaacaaaaacagcaaaatacaaaaaacaggcaatgctcaa gtaagtcaaaaagttgatactgcacaagtaaatggtagcactcgtgctaatcaatcagcg actacaaataatcagcagcctgttgcaagtcacaacagcactacagcaccctaaactaac actaatgttacaaatgctgggttatagtttagttgtagatgaagatgataattcagaaaaat caaatataatccagaataatataatcagctgctaaacctgcagctcttgaaacgcaatat aaaacccgagcactaaagctgcacactacatcagcaccctaaagctaaaactgaaagcgaca cctaaagtaactacttttagcgcttcagcacacccaagatcagttgctgcacacacaaaaa acgagtttgcacaaataataaaccacaagtaaaactctcaattaaacgattacattcgtaaa aataacttaaaaacacctaataattgaagaagattatcacatcttactccctaaatacgc taccgttaacggcgttaggtcgtcctgaaggtatcgttagttcatgatacagctaattgatcgt tcgcagcataaattggtagaatttagttatatgaaaaataactatcaaacgcattcgtacat gcatttggtagtggggatcgtataatcgaaacagcaccaacggattacttatctgggggt gtcgggtgcagtcggtaacccctagattcatcaatgttgaaatcgtacacacacacgactat gcttcatttgcagcttcaatgaataactatgctgactatgcagctacacaaatacaaat tatgggtttaaaccagacagtgctgagtatgtaggaaatggtagactatggactcactac gctgtaagtaaatatttaggtggtagtaccatgccgatccacatggatatttaagaagt cataattatagttatgatcaattatgacttaatttaagaaaaatatttaataaaaaatg ggtaagtgggccatggggtagcgaatctacaactaccctactacacccatcaaaaacca acaacacccgctcgaaacacatcaactggtaaatcaacagttgctgcacaaatgggtgcga caaatcaaaccaacaaatagtggtttatatactactgtatagcacaacacggtaagca actaatggaagttcaaaaaacatttgcgttatctaaaacagctacattaggttaatacaaaa ttctatcttgcgaagattacaattctggtaataaatttgggtgggttaagaaggcgat gtgggttacaacacagctaaatcacctgtaaatgtaaatcaatcatattcaatcaaacct ggtagcaaacctttatcacagtaacctgggggtacattcaaacagttgctggtagtggtct ggctcctggaaacacaaacatttaaggcttcaaaagcaacacaaatgataaatcaatttat ttatatggctcctgtgaatggtaaatctgggtgggttaagtaaaagcatatttagttgatact gctaaacctacgctacacacacacctaagccatcaacacctacaacaaataataaattta acagtttcatcattaaacgggtgtgtcctcaaattaagtcataaaacaaatggcttatctact acagtttatgacaaaaactggtaagcaacgaagaagttcaaaaaacatttgcgtgaaca aaagaagcaagtttaggtggaaacaaattctacttagttaagattacaatagttcaact ttaattgggtgggttaaacaaaggtgacgttatttataacaaatgcaaaatcacctgtaaat gtaatgcaaacatatacagtaaaacacagcactaaatttatattcagtaacctggggcact tataaacaagaagctggtaggtttctggtacaggttaacaaacttttaaaagcactaag caacaacaaattgataaatctatctatttatttggaaactgtaaatggtaaatctgggtgg gtaagtaagcatatttagctgtacctgctgcacctaaaaaagcagtagcacaacacaaaa acagctgtaaaagcttatctactgttactaaacacacacacagactcaaacagtttagcaagatt gctcaagtttaaaccaaaacacactgggtattcgtgcttctgtttatgaaaaaacagcgaaa aacgggtgcgaataatgcagacagcgtacgttctatgtaacaaaagagcgtgctcatggta gaacgcttatgtatttaaacaaatacaagccataacatcccattaggttgggttcaatgta aaagacttaaatgttcaaaaacttaggcaagaagttaaaacgactcaaaaataactgtt aataaatcaaaaacgggttatcaatgggttccttggggtagtaaaaaacaaagtcatttta acaggcaataaacttgctcaagggtacatttaagcaacgaacaaagttatctgtaggcaaa gatgtttatttatcaggtactatttaataacccgactgggtgggttaaatgcaaaaagattta actgcacaaactgctgtgaaacaaactacatcagctgccaaagattataactacacttat gtaattaaaaatggtaaatgggttattactatgttaacacaaatctctgatacagctaaatc tcattaaaagcatttaatagaacacacattcgcagttgttaagaacaaagtcatttaaggga caaacctgggtactatggtaaattatctaacggtaaattagcatggattaaatcaactgat ttagctaaagaatttaataagtaataatcaaacaggtatggcattaaaccaagttgctcaa atacaagctgggttacaatatataaacacaaagtaaacaggttaagtggaacaggt gctaaactttaatgtatgttaagcatgcaatggatagcaagcgtttagctcaagatccagca ttaaataatcaattctttagcgttagaccaacacacaaatatttctattgataaaatcaat caattctttaaaggtaaaaggtgatttagaaaacaaaggtgctgcatttaacaaagctgct caaatgtatggcatttaatagaagtttatcttatctcacatgccctattagaacaggttaac ggtacttctcaattagcgaagggtgcagatgtagtgaaacaaagttgtaactaaactca aacacgaaataaccataacgtatttgggtattgctgcatatgataacgatcctttacgtgaa ggtattaaatatgttaaacagctgggttgggacacagttatcaaaagcaatcgttgggtgg gctaaattcatcggaactcatatgttaaaagctgggtcaaaatacactttacaaaatgaga tgggaatcctgcacatccaggaacacacaaatattgctacagatgtagattgggctaacatc aatgctaaaatcatcaaggctactatgataaaattggcgagtcggcaaatacttcgac atcccacaatatataa</p>
32.	<p>atgaaaggtaaaatttttaaaagtttagttctttatctggtgcaactttgacaacagcgaca cttggtagttctccagcagcaaacgcgttatcttcaaaggctatggacaatcatccacaa caaacgcagctcaagcaaacagcaaacacctaagattcaaaaaggcggtaaccttaaacca ttagaacaacgtgaacacgcaaatgttatattaccaantaacgatcgtcaccaaatcaca gatacaacgaatgggtcatatgcacccgtaacttatattcaagttgaagcaccctactgggt acatttatgtctccgggtgtagtttaggttaagataactcttttaacraataaacacgctc gtagatgtcagcgcaggtgatctcatgctttaaagcattcccttctgcaattaaacca gacaattatccaaatgggtgggttctactgctgaacaaatcactaaatattcagacgaaggt gatttagcaatagtttaaatctccctaatgagcaacacacaaatattgggtgaagtagtt aaaccagcaacaaatgagtaataatgctgacactcaagtttaacaaatattactgtaaca ggatatcctgggtgataaacctgtagcaacaaatgtgggaaagttaaggaaaaatcacttac ctcaaaaggcgaagctatgcaaatatgatttaagtacaactgggtggtaattcagggtcacct gtatttaattgaaaaaatgaagtgatcggaattcattgggncgggtgaccaaatgaattt aatgggtcggtatttattaatgaaaaatgacgcaacttcttaaaacaaatattgaaagt atcatttttgcacagtgacacacctaataaccagataatcctgataaccctaaacatc ctgataaccctaaacacccagatgaacaaataaccctgacaaccctaaacacccctgata atccagacaatggcgatamcaataattcagacaatccagatgcagcttaatt</p>

33.	<p>gtgcaaaaaaaagtaattgcagctattatttgggacaagcgattagcgctgttgcggca actcaagcaaaatcgccgtacacacacagtaaaacgggtgaatcagtggtggcaatt tcaaataggtatgggatttcgattgctaaataaagtcattaaacaatttaacatcta ctaattttcccaaaccaagctactaaagtcatttggctcaagtaattctacagagta agccgtccatcaacgaactcaggtggcggatcactacacagtaacagcagcgactca ttatcatttaacgcatacaaaatattggtacacattacacaaacattatgcgactta tgaataatttctttatttccaggtcaaaaattaaagtcaggtactgctagctca agtaacgctgcggcaatagtagcgtccatcaacgaactcaggtggcggatcactat acagtacagcaggtgactcattgtcatttaattgcatcaaaatattggtacaaacttatcaa aaaattatgagcttaaatggcttaaaatatttctttatatatccgggtcaaaaattgaaa gtaactggttaagtcatacgaactcaggtatctgcaacacgacaaatagaggttacaa acaccagatttcagtcacaaaacttatatacatgggtcaatgtacatatcatgtattt aatcgctgctgaaattggtaaaggtatttagtacttattggtggaatgctaaactgg gataacgcagcggcagcagatgggtacacatacgaataagacactgtaggttctatc gctcaaacagatgtaggttactatggtcatgttatggtttagaacgtgtaaaataacgat ggtagtattttagtttcagaaatgaactattcagctgcacaggtattttaacttacaga acggtaccagcttaccagtaaaataattatagatatattccac</p>
34.	<p>atgaataataaaaaagacagcaacaaatagaaaaggcatgataccaatcgattaaacaaa tttccgataagaaagtatttctgtaggtactgcttcaatttttagtagggacaacattgatt tttgggttaagtggtcattgaagctaaagcggcagaacatacgaatgggagattaaatcaa tcaaaaaatgaacgacagcccaagtgagaataaaacaaactaaaaaagttgtagtgc caactaaagacaatacgaacactgcaactgcagatcagcctaagtgacaatgagtgat agtcaacagttaaagaaactagtagtaacatgcaatcaccacaaaacgctacagctaat caatctactacaaaactagcaatgtacacacaaatgataaattcatcaactacatatagt aatgaacactgataaaagttaatttaacacacgcaaaagatgtttcaactacacctaaca acgactataaacacgaactttaaatcgcatggcagtgaaactggttgcagctccacaaa caaggaaacaaatgttaattgataaagtacatttttcaaatattgacattgaggtgataaa ggacatgttaatcagactactggttaaaactgaatttttgggcaacttcaagtgatgttta aaattaaagcaaaattacacaaatcgatgattctgttaagaggcgatatacttactttt aaattatggtcaatatttccgtccaggatcagtaagattaccttcacaaactcaaaattta tataatgcccaaggtaattatttgcacaaaggattttatgtagtacaacaaacacacaa acataactttttacgaactatgtagatcaatatacaaatgttagaggttagctttgaaaca gttgcattttgcgaacgtaaaaatgcaacactgataaaacagcttataaaatggaagta actttagtataatgatacatatagcgaagaaatcattgtcgattatggtaataaaaaagca caaccgcttatttcaagtacaaactatattaaacaaatgaagatttatcgcgtaatatgact gcataatgtaaatcaacctaaaaatacatatacactaaacaaacggttggttacttaattact ggatataaaatttaatacaaatgcaaaaaacttcaaaattttagcaagtgacagatcaaaat caatttgggtgatttttacccttgatacttcaaaacttaaaagtgttactgatcaattc gatgtattttatgtaattgataataaaacagctacagtcgattttaaagaaaggcacaaca agcagcaataaaacatacatcattcaacaagttgcttatccagataaattagttcaacagat aatggaaaaattgattataactttagacactgacaaaactaaatatagttggtaaaatagt tattcaaatgtgaatggctcatcaactgctaatggcgacacaaaagaaatataatctaggt gactatgtatgggaagatacaaaataaagattggaacaaagatggcaatgaaaaagggt aaagggtgtttatgtcatttctaaagatagtaacggttaagaaatttagatcgtagcaaca gatgaaatgtgtaaatatcagttcactggtttaagcaatggaacttatagtgtagagttt tcaacacagcgggttatcacccgacaaactgcaaatgtaggtacagatgatgtctagat tctgatggactaaactacaacaggtgtcattaaagacgctgacaacatgacattagatagt ggattctacaaaacacaaaataatagtttaggtgattatgtttggtacgacagtaataaa gattgtaaacacagattcgactgaaaaaggaattaaaggtgttaaaagtacttgcacaaac gaaaaaggcgaagttaattggtacaactgaaacagatgaaatgtgtaaataccgctttgat aatttagatagtggttaaatacaaagttatctttgaaaaacctgctggcttaactcaaaaca ggtaacaaatacaactgaagatgataaagatgccgatggtggcgaagttgatgtacaatt acggatcatgtgatttcacacttgataatggctactacgaagaagaaacatcagatagc gactcagattctgacagcgattcagactcagatagcgactcagattcagatagcgactca gattcagacagcgattcagacagcgactcagactcagatagcgattcagattcagacagc gactcagactcagacagcgattcagactcggatagcgactcagactcagatagcgactca gattcggatagcgactcagactcagatagcgattcagattcagatagcgattcggactca gacagtgattcagattcagactcagatagcgactcagattctgacagcgattcagactca gacagcgactcagactcagacagtgattcagattcagacagcgactcagattcagatagc gactcagactcagatagcgactcagactcagatagcgactcagactcggatagcgattca gattcagacagcgactcagattcagatagcgattcggactcagacacgactcagattca gatagcgattcagattcagatgtaggttaaacatactccggctaaacaaatgagtagcgtt aaagatcagcataaaacagctaaagcataccagaacaggttagtgaaaaataaattca aataatggcacattattcgggtgattattcgcggcattaggatcattattgttattcgg cgctcgtaaaaacaaaataaa</p>
35.	<p>atggacataaattcagaagaatacaaaacagaggtacttatcaagacggttgcattgctt gctgctcgatactattagaatctggtgcagaaggtacgcgtgtgagaagataccatgaca cgtatttgcaaaaaaacttgggttacagtgaaagtaaacagctttgttacaacactgtcatc cagtttacgtttacattcggaatcggttctcagaatatttagaattacctctcgagataca aacttaataaaaaatttctcaagctaataaaaaatttcgctgcaattacaacaaatgaaatt tcttttagcgaagcaaaaacgcaacttgaaaaaatatattgttgtaagcgtgacagcag cttccctttaaagggtttgctgcagcaatgattgcaatgagtttcttatatttacaaggt ggtagattgattgatttttaactgcatatttagcaggtagtttaggataccttagtcact gagattttatagctgaattacacgcacagtttatcccagaattcattgggtcatttagtt attgggatttatcgccgttatttgacatacacttatccacaggtgacttggcaactatt atcatttgcggcagtcagcttattgttctggtgtatataaacaacgcaatacaagat ttatttgggtgacacatgttgattgttcacaacgaatcattagaagcattggttactgcg tttggcattcggtgctggcgttggtagcgtatttaatttttagta</p>

36.	gtgatttgctataatgaatgtaattatcgatgaagaaagagaatgctatgacatttaataaagattatttgagctggatagtcataattgattataacaactagcatatatttttggcagttggggcgatatcaatgatgtatttaaccagtcatttttaacatgtagattaccgagattattagaagcattggtgacaggtatgatataactggtgcaggccttatatttcaaagatttttaataatgcatggcagatagctttacattaggattggcaacggcgctacaattgggttcaggatttagcattatatttaggtttaacaacgcttatggattcctgtattttcoataacatttagttgataacattataactgtatttagtcattacgtcggtattgagccaaaggctabccagttagaatccttaataattaaagtggtttaatgattggtgcgtattcaattcacttctatatttttttgatttttataaaacctcgcaaatataatataatggcaattatctgttttggtggttttggtgatgcagaataactcaaatgtatctataatagcaatcacatttatcatttgattggttttggttatatttatcattcttaactcaactaaagtatttgcaattaggagaaataaaaagtcagtcactaggcttaaatgttcaattgattacatatatcggttatgtatagcttctatgataacggcgataaatgtcgcataatggtggcatcattggattcattggtaggtgataccgcaactcattagaaaaatggcagtggaacaatcattaggaagacaattggctttaaaattgttaactggaggacaaaataatggttatggcagattttatggtagcatataattgtcaccagtaacaaataccggcaagttatcattgcatatttggtataccaggtttaattacattgctaatatctcagtcgaacgggttacac
37.	ttgaaaaaattagcatttgcaataacagcaacatctgggtgcagctgcatttttaacgcacatgatgcacaagcttctacacaacatacagttacaatctgggtgaatcattatggagattgctcaaaaaatacaacacttcagtagagagtattaaaacaaaataaccaattagataaacacattgggtatccctgggtcaagttatctcagtaggtggaagtgtatgcacaaaaatcgtcacaacacttctccacaagctgggttcagcatcatctcactgtacaagctgggtgaatcatataatcatttgctagcagataatgggtttcagttgatcaattaatggcagccaataactacgtgggtattttaattatgcctaaccaaacattacaaattcctaatgggtggatcaggtgggtacacacacagctacacacaggttagcaatggcaatgcattcatcttttaaccacaaaatttatcacactgctgggtcaatgtacatggtagctatttgacccgtcggtcgaagctggtagtccaattagcacaatattgggtcagacgctaagttatgggtggtaacgcagctaatgatgggtacaaagtaaacacacacacatcagttgggttcaattatgcaaacacacacgtggtccatattgggtcatggtgcttatgttgaacgtgcaatgggtgatgtagtatctgattttctgaaatgaattacacatatgggtccatacaaatgaactaccgtacaaattccagcttcagaagttcttagctatgcattcatccat
38.	atgcagatttcaatcacaaattatagatgaaacaaagtgttgatgttatttaattgcaaggtagaattttacttgaatcaggtgctgaaacatatcgagttgaagatacaatgaaccgtatccgcacatagttatgggtctcacaataacatatagttttgtcagttcaactgcaattatttttctataaaacgatcgaacaaagtaacagatttaattcggtgacaagagcgtacacacagattagagaaaaatcgctttaacgaatagttctttcagtaaaaatacaaaataaagaactcacatttgatgcaagctaaatctgaattttatctattacagcatgcattacatatctcttttttaacgaattttctttgagctgccattgcatgtggcttcttctatttatgtttgggtgggtgctgcgcatcagattgttggattgcagctcattgctggcgatccgcatttttaacattcagctttgttgcaacgctatatacaaaataaaattttctcagagtttgggtgcagccgctgtgggtc atatccattgacgccaattttactaaaattaggcattgcaaccaatcaagatatcattactatagccaggttcagtcgactgttccctgggtatatttaaccacatgccattcgagatttatagcgggtgaatttacttgcaggtatgtctcgcggtgttgaagctgcattaacagcatttcgaattcggtgctgggtgctgcgaatcggttttatttaactcatt
39.	atgggtatttttcaaaaaattcttgatggcaataataaagaaataaacagtttaggtaaaatctgctgataaagttaactcgcttttagaagaaaaacgggaatttttaactgtagaagaaattcgtaataaaaacgaacaaattccaaacagaaattagctgacattgataatgtcaaaaagcaaaatgattatttttagataaaattttaccagaagcatatgcacttggtagagaaggctctcaaacgtgtattccaattagacacatataaagttcaaatattgggtgggtattgcaattcataaaaggtgatctcgttgagatgagaacaggtgaaggtaaaacatttaacagcgacaatgccaacatactaaattgcattagctggtagaggtgttcacgtttattacagtcattgaatacttatcaaggtttcaaaagtgaagaaattggctgagttatataacttcttaggtttgactgtcgggattaaacttaaacagtaagacgacagaagaaaaacgtgaagcatagcacacagacattacttacagtaataatagctaggttttggattacttacgagataacatgggtgaatttatctgaaagatagatgaatgcgtccattacattttgcaatcatttgatgaggttgactcaattttaacgacgagcgctacgccaattatatttctgggtgaagctgaaaagtcacagtcactttatcacaaagcaaaatgtttttgcaaaaattgtaaaacaggaagattataaatcacgtgaaaaaacgaagctgtacatttaacagaacaggtgcggtataaagctgaacgtatgtttcaaaagtgtgaaacacttatatgatgtacaaaattgttgatgttatttagtcataacacacagcttta cgtgcgcagcttacattacaacgtgacgttagactatatgggttggtagggcgaagttattaattgtcgatcaaatttacaggacgtacaatgccaggccgtctgttctcgaaggtttacac caagctattgaagcgaaggaaggcgttcaaatccaattgaattcctaaactatggcgctctattacattccaaaactattcagaatgtacaataaacttgccggtatgacaggtacagctaaaactgaagaagaagaatttagaataattttaacatgacagtaactcaaatccgcacaataaacctgtgcaacgtacagataagctctgatttaatttacattagccaaaaagggtaaaatttgatgcagtagtagaagatgttgggtgaaaaacacagggcagggcaaccagtgctatta ggtagctgttgagtagacttctgaatatatttcaaatttacttaaaaaacgtgggtatccgtcatgattgtttaaattgcgaaaaatcatgaacgtgaagctgaaattgttgacggcgctggacaaaaagggtgcccgttactattgccactaacatgggtggtcggtgacagatatcaaa tttaggtgaaggcgtagaggaatttagggcgttttagcagtaatagggtacagagcgacatgaa tctcgtcgatttgatgaccagttacgtgggtcgttctggacgtcaagggtgataaaagggttagtgcgttctatttatcattacaagatgaattaatgattcggtttgggttctgaaacgttta cagaaaaatgatagccgactaggttttagatgactctacaccaattgaaatcaaaaatgggtacaaagagctgtagaatacagcacaacacgtgttagaaggtataaacttcgacgcgcgtgtaa cgtatcttagaatacagatgaagtattacgtaaaacacgtgaaattatctataacgaaaga aatagttatttgatgaagaagacagctctcaagtgtgagatgcaatgctacgttcaacgtttacaacgtagttacatttatataatacagcagatgacgagcctgaatatcaacca ttactcgactacatataatgacatcttcttacaagaaggtgacattacagaggtatgatatc aaaggtaaaagatgctgaagatatttgcgaagtcgtttgggtcgaagattgaagcagcatat caaagtcaaaaagatatcttagaagaacaaatgaatgagttgagcgtatgattttactt cgttctatttgatagccattggactgatcatctgcacaaatggatcaattacgtcaagggt attcacttactggttcttatgcacacaaaatccattacgtgactatcaaaatgaagggtcat gaattcttgatatacgtatgcaaaaattggaagaagatacttgtaattcattttaaaaa tctgtagtaacagttgaagataatattgaacgtgaaaaacacacagagtttgggtgaagcg aagcagcttctcagctgaagatgggttaagaagaaagtgaaacccaacaaatcggttaaggc gatcaagttgggtcgtaacgatgattgtccatgtggtagtggttaaaaaattcaaaaattgc catggaaaa

40.	gtgagggagagtagtgcgaatcaaaattacgactacaataaaaatgaagatggaagtaag aagaaaaatgagtagacaacagcgaaagtagttagcattgacgaggtattgctattactcgga ggattagttattgcaatttttgcataatgtagatcattcgaaataaagctaaagaacgtatg ttgaacgaacaaaagcaggaacaaaagaaaagcggtcaaaaagaaaatgcagaaaaagag agaaaagaaaaagcaacaagaggaaaaagagcagaatgagctagattcacaagcaaaccaa tatcagcaatggccacagcagaatcaatatcaatatgtgccacctcagcaacaagcacct acaaagcaacgtcctgtctaaagaagagaatgatgataaagcatcaaggatgagtcgaaa gataaggatgacaaagcatctcaagataaatcagatgataatcagaagaaaactgatgat aataaacaaccagctcagcctaaaccacagcgcaacaccaaaccacaaagccaaataat aatcaacaaaaaatcaatcaaatcagcaagcaaaaccacacagcaccacacaaaatagc caatcaacacaaaataaaacaaaataatgctaatgataag
41.	atgaatatgaagaaaaaagaaaaacacgcaattcggaaaaaatcgattgacgtggcttca gtgctttaggtacgttaatcgggttttggactactcagcagtaaaagaagcagatgcaagt gaaaatagttgtacgcaatctgtagcgcaagtaacgaaagcaaaagtaattgatccaagt agcgttagttgctgcaactaaaacagacgacacaaacgtgagtgatactaaaacatcgta aacactaataatggcgaacagagttgtggcgcaaaatccagcacaacaggaacgacacaa tcactcatcaacaaatgaactacggaagaaacgcccgttaactggtagagctactactacg acaacgaatcaagcttaatacaccgggcaacaaactcaatcaagcaatacaaatgcccaggaa tttagtgaatcaacaagtaatagaacgacttctaatgatactaaatcagatcatctgtga aatccacctcaaaattctacaaatcggaataatgtttcaacaacgcaagatacttcaact gaagcaacaccttcaacaatgaatcagctccacagagtagagatgcaagtaataaagat gtagttaatcaagcgtttaatacaagtgccctagaatgagagcatttagtttagcggga gtagctgcagatgcacggcagctggcagagatattacgaatcagttgacgaatgtgaca gttggatttagctctggtagcagctgtgtatccgcacacagcaggttatgtcaactgaat tatgggttttccagtgcctaaattctgtggttaagtgacacattcaaaataactgtacct aaagaattaaacttaaatgggtgaacttcaactgctaaagtccaccaatttatggctgga gatcaagttatggcaaatgggtgaatcgatagtgatggtaattgtttatatacatttaca gactatgtaataactaaagatgtagttaaagcaactttgacctgcccgttatattgac cctgaaaatgttaaaagacaggttaattgtgacattggctactggcataggtagtagcaaca gcaacaaaacagttatgtagattatgaaaaatattggaattttataacttatctatt aaaggtacaattgaccaaactcgataaaacaaataatagttatcgtagacaatttatgtc aatccaagtgagagataacgtttattgcccgggttttaacaggttaatttaaaacaaatac gatagtaattgcattaatagatcagcaaaatacaagttataaagttataaagtagataat cgagctgatttatctgaaaagttactttgtgaatccagaaaaactttgaggatgtcactaat agtgtagaattatcattcccaaatccaaatcaatataaagtagagtttaatacgcctgat gatcaaatatcaacacccgtatatagtagttgttaattggctcatattgatccgaatagcaaa gggtatttagctttacgttcaacttttatatgggtataactcgaatataattttggcgtct atgtcatgggacaacgaagtagcatttaataacggatcaggtttctggtagcgttatcgat aaaccagttgttctgaacaacctgatgagcctgggtgaattgaacaaattccagaggat tcagattctgacccaggttcagattctggcagcgatttcaattcagatagcgggttcagat tcgggttagtgattctacatcagatagtggttcagattcagcgaagtgattcagattcagca agtattcagactcagcgagtgattcagattcagcaagcgattccgactcagcgagcgat tcggactcagacaatgactcggattcagatagcgattctgactcagacagtgactcagat tcggacagtgactcagattcagatagcgattctgactcagacagtgactcagattcagat agcgattcagattcagatagcgattcagattccgacagtgattccgactcagacagcgat tctgactccgacagtgattccgactcagacagcgattcagattccgacagtgattccgac tcagatagcgattccgactcagatagcgactcagattccgacagcgattcagattcagac agcgattcagattcagatagcgattcagattccgacagtgactcagattccgacagtgac tcggattcagatagcgattcagattccgacagtgactcagattccgacagtgactcagac tcagacagtgattccgattcagcgagtgattccgattcagatagtgattccgactccgac agtgactcggattcagatagcgactcagactcggatagcgactcggattcagatagcgat tcggactcagatagcgattcagaatcagacagcgattcagaatcagacagcgattcagat tcagacagcgactcagacagtgactcagattcagatagtgactcggattcagcgagtgat tcagactcaggttagtgactccgattcatcaagtgtatccgactcagaaagtgtattcaaat agcgattccgagtcaggttctcaacaataatgtagttccgcctaatcactcaaaatgggt actaatgcttctaataaaaatgaggctaaagatagtaaaagaaccattaccagatcacgggt tctgaagatgaagcaaaatacgtcactaatttggggatttatagcatcaataggttctatta ctacttttcgaagaaaaaagaaaaataaagataagaaa
42.	atgaattcaaatcacgctaaagcatcagtgacagagagtggtgacaaaaattttagtt ccagaatcaggaatttaataaaattattccagcttacgatgaatttaagaattcgccaaaa gtaaatgttagtaatttaactgacaataaaaactttgtagcttctgaagataaattgaat aagattgcagattcattcgccagctagtaaaattgtagataaaaactttgtcgtaccagaa tcaaagttaggaacattgtgccagagtacaaagaaatcaataatcgcgatgaatgtagca acaaacaatccagcttcacaacaagttgataagcattttgttgctaaaggccagagta aatagatttattacgcaaaaacaaagtaaacaccacttcattactacgcaaacccactac aagaagaattattctcatacaaaacacacatgtacataaacaatgtaaaatcagcaag gattctattaataaacactttattgttaaacatcagaatcgcttagatatacacatcca tctcaatctttaattatcaagcatcattttgaggttccctggatatacgcgcataaaattt gttacaccagggtgctagcattaaaaatcaatcattttgtgtgtgccacaaataaat agtttcaaggtaattccaccatattggtcacaaattcacatcgtagtgatgacaaagtttc caaaataacacacagcaacacatcaaaatgctaaagtaaaataagcatatgactataaa tacttctattctataaagtagttaagggtgtagaagaaatatttctcattttcacaatca aatgggtataaaaattgggaacacatcattaaatatcaaaaatgtaaaattatcaaatatgct gttccaagttatagccctacacactacgttctctgaatttaagggttagcttaccagacca cgagta

43.	<p>ttggagcatacaattatgaaaatgagaacaattgctaaaaccaggttagcactagggctt ttaacaacaggcgcaattacagtaacgacgcaatcggtcaaagcagaaaaatacaatca actaaagttagacaagtaccaacgcttaaagcagagcgattagcaatgataaacataaca gcaggtgcaaatccagcgacaacacaagcagctaacacaagacaagaacgcacgcctaaa ctcgaaaaggccacaaatactaatgaggaaaaaacctcagcttccaaaaatagaaaaata tcacaacctaaacaagaagagcagaaaaacgcttaatatcagcaacgcccagcgcctaaa caagaacaatcacaaacgacaaccgaatccacaacgcccgaaaactaaagtgcacaacct ccatcaacaacacgcgcacaaccaatgcaatctactaaatcagacacaccacaatctcca accataaaaacagcacaacagatatgactcctaaatatgaagatttaagagcgattat acaaaaccgagttttgaatttgaaaagcagtttggtttatgctcaaaccatggagcagc gttaggtttatgaatgttattccaaatagggttcattataaaatagctttagttggaata gatgagaaaaataaaagatggaccttacgataatcagatgtatttatcggttttagaa gacaaataatatcaattgaaaaaatattctgtcggtggcatcacgaagactaatagtaaa aaagttaatcacaaagtagaattaaagcattactaaaaaagataatcaaggtatgatttca cgcgatgtttcagatacatgattactaagggaagagatttcttgaaagagcttgatttt aaattgagaaaaacatttattgaaaaacataatctttacggtaaacatgggttcaggaaac atcgttattaaaatgaaaaacggtgggaatatcggtttgaattacacaaaaaacgtcaa gagcatcgtaggcaggcactaatattgataacattgaagtgaatataaaa</p>
44.	<p>atgacaacaattaaaacatcaaaacttaggattcccaagattaggtagaaaaagagaatgg aaaaaagccatcgaagttattgggcaagaagatttctaaagaagaattagatcaaaaca ttaaactgattacataaagaaaaatttattattacaaaagtactatcacttagatagcatc ccagttgggtgatttctctttatatgacctatattagatagctcattattatcaacatc atccctgaacggtttccaaggaagaactattgatgatgtattattatttgatattgctcgc ggtaataaagaccatgttgcaagtgcacttataaatgggttaacactaatatcattac atcgtaacctgaatgggacaatgttgagcctaaagtgcgcgaatgtattattagatcgc ttttaaattatcccaatctttaacgcttaacgctcaccctcgctattgttggtccgattact tttggttaaatatcaaaaaggcggtcaccaaacctttgaagaaaaagttaaaacgttatta ccactttataaagaagtgtttgaatcattaatgtatgcaggtgctgagtacattcaagtt gatgagccaatcttagttacagacgacagcgaagctatgaaaaatttacacgtgaagct tatgactatttcgaaaaagctgggtgttgctaaaaaattagtcattcaaacatactttgaa cgtgcacatcttaaatctttagttctttacctgttggttggtataggttttagactttgtc catgtaaatgggtataaccttaaacatataagctggagatttttgataaatcaaaaaaca ttatacgttggaattattgatgggtcgtaattgtatgggcaagtgcattgaagctaaaaaa gtcttaattcgataaattgttagcacacactaatgaacttgctcattcaacctcatcttca ttattacatgttccagtatcttttagatgatgaacatttagatcaaggtgttggaagaaggc ttaagcttttcaactgaaaaatttagacgaattagatgcattgcgtcgcctatttaataca aacgataggtttaaatatgataaattaaaagcagcttatgagcgtttccaaaatcaatca ttcaaaaacttagattatgatttcgaaagcgtgcgtacttcaagacaatcaccattcgcg caacgtattgaacaacaacaaaaacgtttgaacttaccggatttaccaacaacaactatt ggatcattccacaaagccgagaagttcgaaaaataccgtgcagattggaagaacaaacgc attacagacgaagcatatgaaacattcttaaaaaatgaaattgctcgatggattaaaaat caagaagacattggcttagatgtatttagttccaggtgaatttgaacgtaatgacatggtt gaattcttcggagaaaaattacaaggtttotttagtaactaaatcggttggttgcaatca tatggttcacgtgcgtgtaaaaccaccaatcatttatggtgatgtaaaatggacagcgct ttaactgttgatgaacagtttatgcacaaagcttaacagataaaaccagttaaaggatg ttaactggacctgttaacaattctaaactgggtcatttgaacgtgttgatttaccacgtaaa gtcggttcaagatcaaatgtcttagcaatcaacgaagaagtatttagcacttgaagctgca ggaaatcaaaagttatccaagttgacgaacctgcattacgtgaaggcttaccattacgtct gaatatcacgaacaatatcttaagatgctgttttatcatttaaaacttgcacgtcttca gttcgtgatgaactcaaatccatacacatatgtgttattctcaattcggtcaaatcatt catgctattcatgacttagatgctgtgttatttcaattgaacatctcgtagccatggt gatttaattaaagactttgaagatatatttatgatttaggtattggtctaggtgtat gatattcatagttccagctatttcaacaaaagaagaattactacagcaatcaatcggttca ctacaacaaatcgaccgctcattattctgggttaaacctgactgtggtttaaaaacgcga aaagaagaagaagttaaagatgcattgactgtgcttgtgaatgctgttaaagctaaacgc caagaa</p>
45.	<p>atgagcgacacatataaaagctacctagtagcagtagctatgcttcacagctcttagcaatt gtacttatgccgtttctatacttcaactacagcatggtcaattgcgggattcgcaagtatc gcaacattcatattttataaagaatacttttatgaagaa</p>

46.	<p>atgttaagaggacaagaagaagaagatagattagaaagattcaataggcgtggtg tcagtttagcggctacaattgtttgttgtgtcatcacatgaagcacagcctcggaaaaa acatcaactaatgcagcggcacaacaaagaaacactaaatcaaccgggagaacagggaat gcgatcaactgcacatcaaatgcagtcaggaaagcaattagacgatatgcataaagagaat ggttaaagtggacagtgacagaaggttaagatagcgttcaatcatcgaagcatcaatca acacaaaatagtaaaacaatcagaacgcgaataatgataatcaagtaagcaagattctgaa cgacaaggttctaaacagtcacaccaaataatgcgactaataactgaacgtcaaaat gatcaggttcaaaaacccatcatgctgaacgttaaggatcacaatcgacaacgtcaca tcgaatgatgttgataaaatcacaacatccattccggcacaacaaaggtaatacccaatcat gataaagcagcacaacttcaactacaccccgctcaatgataaaactgcacctaataca acaaaagcagaagatgcacacgcgacaaacatccaaatcaacagatcacatcaacct gcgcatacaatcatagatgcaagcaagatgatactgttcgccaagtgaaacagaacca caagttggcgatttaagttaacataatcgatgggtcaaaatccccagagaaaccgacagat aaaaatactgataataaacaactaaacaaagatgcgcttcaagcgcttaaaacagttcg actacaatgcagcagcagatgctaaaaaggttcgaccacttaaaagcgaatcaagtaca ccacttaacaaaatccagttgtttttgtacatggatttttaggatttagtaggcgataat gcacctgtctttatatccaaattattggggtggaaataaatttaagttatcgaagaattg agaaagcaaggctataatgtacatcaagcaagtgtaagtgcatttggtagtaactatgat cgcgctgtagaactttattattacattaaaggtggcgctagattatggcgagcacat cgagctaaatcagcagcagatgagcgctatggtaagactataaagggaatcatgcctaatgg gaacctgtgtaaaaggtacatctgttagggcatagatgggtggcacaacaaatctggtta atggaagagtttttaagaaatggtaacaaagaagaatggcctatcataaagcgcatggt ggagaaatctacattttcactgtgtgtcataacaataatgggtgcatcaatcacaaca ttagcaacaccacataatgggttcacaagcagctgataagtttggaatacagaagctgtt agaaaaatcatgttcgctttaaatcgatttatgggtaacaagttatcgaaatcagattta ggatcaacgaatggggctttaaacaaatcaccaatgagagttacattgactatataaaa cgcgttagtaaaagcaaaatttggacatcagcagcaaatgctgctatgatttaacgta gatggctctgcacaaatgaacaacatgacaagatgaatcctaataattacgtatacagact tatacaggtgtatcatctcactgtgtccattagggtatgaaaaatcctgatttaggtaca ttttctctaatggctacacagcagtagaattattggctcatgatgcaagagaagaatggcgt aaaaatgatgggtgcgtaccagtgatttcgtcattacatccgtccaatcaaccatttgg aatgttacgaatgatgaacctgccacacgcagaggtatctggcaagttaaaccaatcata caaggatgggat</p>
47.	<p>atgattcatctcattaaaggggaagatgcacatcacagttttgtgtattcatttaacaaa gggggttgccttaaatgaatcaatcatcttaatgcacaacacaaagtgcatggcgtttt ttgtctcatagtttagtgggcatactatgtttctttattccttttacgatttaattgtaac aacactattttcgtcgatcatgttcatctagccattcgcctcaatcataggtccacttatg ccctatgttgcactgattatgattttaattgggtacagcgttaccaatagtgagacgtact ttatgacttcaatcacaacactgggtcattacattatttaagttgaggtgcaatgatc gggtataatgtatgtatttaaaatcgggtccatcaatactatttaaaagtaactatggtccg ttttgtttgaaaaataatgatgccattaaagtatttattccagtaggtgcaatttgcg ctttctttattagttgggtatgggttattagaatttgcggtgtttatatggagcctatt atgagacctatttttaaacaccaggaaaaatccgctgtcgatgcagtggttgcgtttgtc ggcagttattccttaggattattgattactaatcgtgtctataaagcaaggatgtaaac aaacgagaagccacgattatgcgactgggtttcaacagtttcagcaacttttatgatt atcgttgcataaaactttaggatttaattgcgcagttggaatttatacttttggaataacttta gtcatcactttgtcgtgactgcaattactgcattgggtaccgccaatcagcaatgaatca acagaatattataacggcagaagagagaacaagaagttgctattgaaaggaagcagactg aaaactgcataatgcagagggcagtgaaacaaaatgcattaacaccatctctcgtgaagaac ggtttgggacaatttgaagagcgggtttagaataactggttgggtatttacccttctatatta tcgattgggttttttaggactgattgttagcgaactatacaccattcattgattgggttggc tatactctctatccattttattatatttcccaattgctgacaggtttactagcaaaa gcgtcagcgatttctattgttagagatgtttctaccatctttgttagtaactaaagctgca atgagttactaaatttgcgtcgggttagtaagcgtatcagccattatcttttctcagca ttagtgccatgtatactagcaactgaaattaaaaatcctgtctggaactcatcatt tgggttttaccggtggcgttgcgtatttaatacaccatcccgctgcgtttactttttt gga</p>
48.	<p>atgggtattatgaagaaaacaattttactgcagatgacaactcttactttatttagtatg tcgcctaactcggctcaagcatatacgaatgatagcaaacattagaagaagcaagaaa gcacaccacaaacgcacagttcaagtgaaataaagacacggcgctatacttatacatat gacaaaacacacacgccaacacaaatcatcaaaacagtcacgtacaaacgacaatcat caacacgcacaaatcaacgtgatcttaacaacaaatcagttaccattcttcattaagtggctcag tatagcgaatatttaagcgaattgatttcacacacacgcctcaaacgtcaccagcaat cctttgacaccagcaatacggatgtcgaagacaatgacgatgaattaaataacgctttt tcaaaagatacaaaagggcttattacaggcatcgatttagacgaattgtatgacgaatta caaatcgcggaatttaatyacaaagcaagaccgctgacggtaaaccttttagcattaggt aacggtaaaatcattgatcagcctcttatcacaagtaagaacaacttatatactgtgga caatgtacattggtatgtctttgataaacgtgccaaagatggacacagcatttagtacct tggggagatgtcaaaactgggcaggccaagcttcaagcaatggcttcaagtagataga caccacacacgaggatcaattttacaacagtaaatgggtccatttgggtcatgtagcctac gttgaaaaagttaatttgatggaagtattctaatctcagaatgaactggatttggtaga tatatcgtttcatcaagaacctctctgcttcagaagtttcatcatataattacatccat</p>
49.	<p>ttggaggtatcgtcaatgaagccttatatacaacttgttgtgttcaagcaatgggtacaa tacatcttgcgtcaaacacatttgcacacgtcgtacttattgggtacgggttacggt gtagcacatgacaacttcaaaaatccgattaccattcaagattttagacaaacacactgca tcaaaaatcattcgtcaataaaattaaacaactcgtactatgtaactattaaaaagtcgat gaagatgaagcgtatattgaagatgatgttactaaaaaggaagcatttttaagtatgcaa attcctaaaggtttctctcaaaaatttaaaagagaacggtttaaagaaacgatacagttta tatggtagagatgactttataggtggatttgcgttagaaattgttagtagttcattatat gagcagaacaaattcttaacattatttgaacacacttgaggatagaaacagcattcaatcc atcgatgctatcaaacagtcctatcataaacatacactgaattcaaaatcaaatttgtg tcgcttactaaacagcacaacactctattcaattagcttaactcttgcggtgatttta ttgttagcgtgttcaagtagtacttcatcgttttaaaccaacaagcagcatttgcaa cgatttatcaaatatcatttaagccgtttcaaacataatagtagttatgtaatgacacac acgattttgttattgttggtagtattggcagtttagtctatatttgcctcaaccactcagc ttaatattttacttaaaatcactgttacttatattgatttatgagataggtatcgtctt acttattccatattcaacaataagtcacgattattcatgacatttatatagcactt gctatgggtatcgtatacttgattattttcatg</p>

50.	<p>atgattgaggtgacagagatgaactttttgatattccataagattccgaacaaaggcatt ccattatcgggtacaacgttaaattatggcttagaaacttcatgcaagctttcttcgtatg tctttgtttatatggctatgtatttaattcgaaacaactttaaggcgccacaacggttt ttaaaggaggaaattggattatctacattagaacttgggtatatcggtatgacatttagt atccaggtacgggttaggaaaaacattacttggatatttggcgtatggacgttaacacaaaa cgtattatctcgttcttacttatcttatctgcgattacagtttaattatgggatttggtt ttaagttactttgggtctgtaattgggattatttaattgtactttggggacttaacggggtg ttccaatcagtttgggacctgcaagttattcaacgatttcaagatggggcgcaagaacg aaacgtggcgacacttaggattctggaatacatcacataaatacgggtggcgcatagca gggtgggttgcactttggggtgctaatgtatttccatggaaatgttatagggaatgttc attttccatcgggtgattgcattacttattgggtatcgcaacattatttatcggaagaat gatccggaagaattaggatgggaatcgtgctgaagaatttgggaagagccggtcgataaa gaaaaatttgattctcaaggtagacgaaatgggagatctttaaaaaatatattctggga aatcctgtttatattggattctatgtgtttcaaacgctcttggtagacattgtacgaatcgg attgataaactgggcaccgttatattgtgtagagcatttacacttttagtaaggcgatgca gttaatacagatttctactttgaaattgggtcatttagtgcaagtttattatggggctac gtatcagacttattaaaaaggtcgtgcaattttagctattggctgtatgtttatgatt acatttgggtcttattctacacaaatgctacaagtgcatgaggttaacatttctattg tttgcattagggtgcttaattcttgggtccgcaattatttaattgggtgtatcattgactgg ttgttctcaaaaatgccatcagtgtagcaaacggaatgacaggttcaattcggtatctta ttcgggtgactcaatggcgaaagttgggttggcggtcattgctgtagcaaacggttaacggt ttaaacaatctttggatatacattaaagggtggacagatgttttcatcgtcttctatgtt gcattattcttaggcattgattctattaggaaatcgttgccttctatgaagaaaagaaatt agaagtttaaaaaatt</p>
51.	<p>atgacaaagagaaaaacatatataaaagcaatcgggtatttacagttttatagcgatgatg tttgtcatcttttatatccactactgtggacatttggcatttcccttaattccaggtacg aacttggtagtgggtgcaaaatgataccagacaatgcaacatttaaaaattatgcatctcta ctattcgatgacagtagtcaatacctgacttgggtataaaaatcgccttatcgtagcatct gcaaatgcactggttagtgatatttgcacgttaacagcatatgctttttctagatat cgcttttgggtcgtaaatcgggctgattacatttttgattttacaaatgttccctgta ttaattggcaatgggtcgcaatctatatatttgcataaatacgaattttagattatagattctt tttgacttaacactgggtatatatttgggtgacaaatccgatgaatgcttttttagtga gggtacttgcatacagatttcaaaagaaatgatgaatctgcaaaattgatgggtgcagg catatcggtatttttcaaaatattgcttccatttagctaagcagatttttagcagtttgg gctttgttcaattttatggggccatttatggactttatattacctaaatactatttaaga agtcctgaaaaatccatttagcagttggattgttcaactttatattgaataagtagca aataatttccagaggtttgacgaggggcaattatgattgacagtaacatagcaaatcgta tctctgttcttgcacgctattttagtatcaggttttaacaacaggttgcgcaaaaagg</p>
52.	<p>gtgatggaaaaatagtagcagcgaagcggttaagaagcagcagatgcatcttgatgaatg actgtggaagaggtttaaattacgatgaataaagaagatcagcaagtcctcgttagcagtt cgaaaggcaataaccacaattgacaaaagtaattaaaaaacaaatgacacagtagtaaaag gggtggacgattgtatttatatcggtgacaggtacaagtggaaggttgggtgctttagatgca cgaggatgtgtacattcaatactgacctcatgaaatttataggattatttgcgtggt ggacaacatgctatgacgatggctgtagaaggtgcggaagatcacaaaaaattagcggaa gaagatttgaaaaaatagatttaacatcaaaagatgctggttataggaaatgcccgcaggt ggcaaacgccatattgttataggcggtttaacatttgctaacacaatcgggtgctacaaca gtatctatttcatgcaatgaacatgcagttataagtgaaatgcccagtagtagaagtagaa gttaaagttgggtccagaagatttaactgggtcaaacaggtttaaaagtcgttagcagcaaa aagtttaattttaaatagtatttcaacctcacaaatgggtgggtgctggaaaagttacagat aacctcatgattgattttaaagcaacaaatcaaaaactgacgacggtttagtgctgatt attcaagaataatgtgctatcacatgatgaagcaatggcgttatatcaggtatctgag catgattgtaaggttgcgacagttatgggtatgtgtggcatttctaaggaagaagcaaca agacgggttatcaacaattggtgacattgttaaacagcgaatcagagatagacaacct</p>
53.	<p>ttgcaataacataattcgttatattatgatgactttacaataacatacaggggttattaat ttgaaaaagaaaaacatttatcaattcgttaactagggtgtaggtattgcatctgtaact ttaggtagacttatttatctggtggcgtaacacctgctgcaaatgctgcaaacacagat gaagctcaacaaaaatgctttttatcaagctttaaataatgccttaacttaaatgctgataca cgcaatgggttttatccaaagccttaaaagatgacaaagcgaaggttaacgttttaggt gaagctcaaaaacttaattgactctcaagctccaaaagctgtagcgcaacaaaaataacttc aacaaagatcaacaagcgcttctatgaaatcttgaacatgcttaacttaaacgaagcg caacgttaacggcttcaaaagctttaaagcagcaccgaagcgaagcactaacgtttta ggtgaagcttaaaaaattaaacgaatctcaagcaccgaagctgatacaatttcaacaaa gaacacaaaaatgctttctatgaatcttgaatgcttaacttaaacgaagaacaacgc aatgggtttcatccaaagcttaaaagatgacccaagcgaaggtgtaacctattgtcagaa gctaaaaagttaaatgaatctcaagcaccgaagcggtatacaaatcaacaaagaacaa caaaatgctttctatgaaatcttacattacctaacttaaacgaagaacaacgcaatgg ttcatcaaaagccttaaaagatgacccaagcgaagcgcttaaccttttagcagaagctaaa aagctaaatgatgctcaagcaccacaaagctgacacaaaattcaacaaagaacaacaaaat gctttctatgaaattttacattttacttaacttaactgaagaacaacgtaacggcttcatc caaagccttaaaagcagatcctttagtgagcaagaaattttagcagaagctaaaaagcta aacgatgctcaagcaccacaaagaggaagacaataacaagcctggcaagaagacaataac aagcctggcaagaagacaacaaagcctggtaagaagacaacaaagcctggcaaa gaagcgggcaacaaagcctggtaagaagacaacaaaaaacctggtaagaagatggcaac aagcctggtaagaagacaacaaaaaacctggtaagaagacggcaacaaagcctggcaaa gaagatgggcaacaaacctggtaagaagatggtaacggagtagatgctgtaaacctgg gatcagtagaattgacattgcaaaagcaaacggcactactgctgcaaaaattgctgcagat aacaatttagctgataaaaaatgatcaaacctgggtcaagaacttgttggtagaagaag caaccaggaacacatgacagatgctaaacaaagcctcaagcattaccagaacgtggaaga aatccattcatcggtacaaatgtatttgggtgattatcattagccttaggtgcagcgta ttagctggacgctgctcgcaacta</p>

[illegible]

[illegible]

66.	MANTKKTTLLDITGMTCAACSNRIEKKLNKLDVNAQVNLTEKATVEYNPDQHDVQEFIN TIQHLGYGVAVEFVELDITGMTCAACSSRIEVLNKMDDGVONATVNLTEQAKVDYYPEE TDADKLVTRIQLKGYDASIKDNNKDQTSRKAELQHKLIKLIISAVLSLPLMLMFVHLF NMHIFALFTNFWQFQILATPVQFIIWQFVYVAYKNLRNGGANMDVLVAVGTSAAFYYSI YEMVRLLNGSTTQPHLYFETSAVLITLILFGLYLEARAKSQTNALGELLSSLOAKEARIL KDGNEVMIPLNEVHVGDITLVKPGKIPVDGKIIGKMTAIDESMLTGBSIPVEKNVDITV IGSTMKNNGTITMTATKVGDDTALANIKVVEEAQSSKAPIQRLADIISGYFVPIVVGIA LLTFIIVWITLVTPGTFFPALVASISVLVIACPCALGLATPTSIMVGTGRAENGILFKGG EFVERTHQIDITVLDKGTITNGRPVVTDYHGDNQTLLQLLATAEKDSEHPLAEAVNVAK EKQLILTEFTTFFKAVPGHIEATIDHHHILVGNRKLMDNDISLPKHISDDLTHYERDCK TANLIAVNYSLTGIIAVADTVKDHAKDAIKQLHDMGIEVAMLTGDKNNTAQAIKQVGDID TILADILPEEKAAQIAKLQOQGGKAVMVGDDVNDAPALVKADIGIAIGTGTVEAIEAADI TILGGDLMLIPKAIYASKATIRNIRQNLFWAFGYNIAGIPIALGLLAPWVAGAAALSS VSVVTNALRLKMRLEPRKDA
67.	MPDSIRETIDYAVENNMFSADIMVKEEMELSGKSRDEVRAQMKQNLDMRDAVIGTGTGD GVESVGYTGHDAKLRDYNETHHALSGYEMIDAVKGAITNEVNAAMGIIICATPTAGSS GTIPGALFKLEKTHDLTEEQMDLFTSALFGRVANNASVAGATGGCOAEVGSASAMAA AAAVAIIPGSSPEASGHAMALAINLLGLVCDPVAGLVEIPCVMRNAIGSGNALISADLAL AGIESRIPVDEVIEMDKVGRNLPASLRETLGLGLAGTPTGEAIKRIKIFGTAEDMVKN
68.	MKNLRYGIRKHKLGAAASVFLGTMIVVGMQDKEAAASEQKTTTVEENGNSATDNKTSET QTTATNWNHIEETQSYNATVTEQPSNATQVTTTEAPKAVQAPQTAQANIETVKEEVKE EAKPVQKETTQSQDQSGDQROVDLTPKKATQNOVAETQVEVAQPRTASESKPRVTRSDV AEAKEASNAKVETGTDVTSKVTVIEIGSIEGHNNVKNVPHAGQRAVLKYLKLFENGLHOG DYDFDLISNNVNTHGVSTARKVPEIKNGSVVMATGEVLEGGKIRYFTNDIEDKVDVTAE LEINLFDIPKTIVQNGNQTITSTLNEEQTSKELDVKYKDGIGNVYANLNGSIEFTFNKANN RFHVAIFIKPNNGKTTSTVTGTLMKGSINQNGNPKVRIPEYLGNNEDIAKSVYANTPTD SKFKEVTSRNGYTLTWDNGLVLYSNKANGNGKNGPIIQNNKREYKEDTICKETLGTQYDKNLV LYKYYDYDSLTLDIDYHTAIDGGGGYVDGYIETIEETDSSAIDIDYHTAVDSEAGHVGGY TESSEENSPDPEESTHENSXKHADVVEYEEDTNPGGGQVTTESNLVEFDEESTKGIIVTG AVSDHTIVEDTKEYTTESNLIELVDELPEEHGQAQGPVEETENNHHISHSGLGTENGHG NYDVEIEIENSHVDIKSELGYEGGQNSGNQSFEEDEEDKPKYEQQGNIVDIDFDSVPQ IHQKNQNSQFEEDTEKDKPKYEHGGNIIDIDFDSVPHIGHFNKHTIEEDTNDKDKPSY QFGHNSVDPEEDTLPKVSQNGEQQTIEEDTTPPIVPTPTPEVPSEPETPTPTPEV PSEPETPTPTPEVPSEPETPTPTPEVPAEPKPPPAKEEPKPKPKPVQGGKVVTPVI EINEKVKAVAPTKPKQSKSELPEETGGEESTNKGMLFGGLFSILGLALLRRNKNHKA
69.	LHIRENITVKNLRYGIRKHKLGAAASVFLGTMIVVGMQDKEAAASEQKTTTVEENGSSA TESKASETQTTNNVNTIDETQSYSTATSQPSQSTQVTTTEAPKTVQAPKVESRVDLP SEKVADEKTTGTQVDIAQPSNVSEIKPRMKRSTDVTAKEVEETKATGTDVTKVVEV EEGSEIVGHKQDQTNVNNPHNAERVTLKYKWKFGGKAGDYDFTLSDNVETHGISTLRK VPEIKSTDDGQVMAETGIEGERKVRVYTFKEYVQEKDITAEISLNLFDIPTTVTKQGNQNV EVLKGBTIVSKIFNIQYLGVRDNGVGTANGRIDTLNKGVDGKPSHFAYMKPNQNSLSSVT VTGQVTKGNKPGVNNPTVKVYKHIGSDDLAESVYAKLDDVSKFEDVTDNMSLDFDTNGGY SLNPNLQDQSKVYVIEGYGYSNANLEFQTHLFGYNYYYTSLNWKNGVAFYSNNAQ GDGDKLEKPIIEHSTPIELEFPKSEPPVEKHELTGTIEESNDKPIDFEYHTAVEGAEH AETGIEEEDSIHVDFEESTHENSXKHADVVEYEEDTNPGGGQVTTESNLVEFDEESTKGI IVTGAVSDHTTIEDTKEYTTESNLIELVDELPEEHGQAQGPVEETENNHHISHSGLGT NNGHNGVVIIEIENSHVDIKSELGYEGGQNSGNQSFEEDEEDKPKYEQQGNIVDIDFDS VVPQIHQGNQNSQFEEDTEKDKPKYEHGGNIIDIDFDSVPHIGHFNKHTIEEDTNDK KPNYQFGHNSVDPEEDTLPQVSGHNEGQQTIEEDTTPPIVPTPTPEVPSEPETPTPT TPEVPSEPETPTPTPEVPTEPGKPIPPAKEEPKPKPKPVQGGKVVTPVIEINEKVKAVV PTKKAQSKSELPEETGGEESTNNGMLFGGLFSILGLALLRRNKNHKA
70.	MQMRDKKGPVKNRVDLFLSNKLNKYSIRKFTVGTASILIGSLMYLTQQAEEAENNIENP TTLDKNVQSEKVKIEEVTKNDTAPQGVAKSEVTSNKDTIEHPSVKAEDIKKEDTPKE VADVAEVOQPKSSVTHNAETPKVRKARSVDEGSFDITRDSKNVVESTPTITQGEHFEVGY SVDIQKRPDLGVSEVTRFNVGNESNGLIGALQLKKNIDFSKDFNPKVRVANNHQSNTTG ADGWGFLFSKGNAAEYLTNGGILGDKGLVNSGGFKIDTGYIYSSMDKTEKQAGQGYRGY GAPVKNDSNGNSQMVGENIDKSKTNFLNYADNSTNTSDGKPHGQRLNDVILTYVASTGKM RAEYAGHTWETSITDLGLSKNQAYNFLITSSQRWLNQGINANGWMRTDLKGESEFTTPE APKITTLEKKEVEEIPFKKERKFNPDLAGTEKVTREGQKGEKITTITLKNPLTGVIIS KGEPEKEITKDPINELTEYGPETIAPGHRDEFDPKLPTEKEEVPKPGIKNPETGDVVR PPVDSVTKYGPVKGDSIVEKEEIPFKKERKFNPDLAGTEKVTREGQKGEKITTITLKN PLTGEIISKGESKEEITKDPINELTEYGPETITPGHRDEFDPKLPTEKEEVPKPGIKN PETGDVVRPPVDSVTKYGPVKGDSIVEKEEIPFKKERKFNPDLAGTEKVTREGQKGEK ITTITLKNPLTGIEISKGESKEEITKDPINELTEYGPETITPGHRDEFDPKLPTEKEEVP PGKPGIKNPETGDVVRPPVDSVTKYGPVKGDSIVEKEEIPFKKERKFNPDLAGTEKVT EGQKGEKITTITLKNPLTGIEISKGESKEEITKDPVNELTEFGGEKIPQGHKIDFPDNL PTDQTEKVPKPGIKNPDTGKVIEEPVDDVIKHGPKGTPTETKTVEIPFETKREFNPKLQ PGEERVQEGQPGSKTITTITPITVNLPTGEKVGEQPTETITKQPDVKIVEFGGEKPKDPK GPEENPEKSRPTHPSPGVNPNPNGLSKDRAPNGPVHSMKNDKVKKSKIAKESVANQEK KRAELPKTGLESTQKGLIFSSIIGIAGLMLLARRKN
71.	MKNKYISKLLVGAATITLATMISNGEAKASENTQQTSTKHQTTQNNYVTDQQAQAFYQVLH LKGIIEEQRNQYIKTLREHPERAQEVFSESLKDSKPNDRRAQQAFAFNVNLKNDNLTEQE KNNYIAQIKENPDRSQQVWVESVQSSKAKERQNIENADKAIKDPQDNKAPHDKSAAYEAN SKLPKDLRDKNNRFVEKVSIEKAIIVRHDERSKANDAIKLNKEDSIBNRRLAQREVNKA PMDVKEHLQKQLDALVAQKDAEKVAPKVEAPQIQSPQIEKPKVESPKVEVPQIQSPKVE VPQSKLLGYQSLKDSFNQYKYLTDITYKSKYKEDYDTAKYYNTYKYKGAIDQTVLTVL GSGSKSYIQPLKVDKNGYLAKSYAQVRNYVTEINTGKVLVYTFYQNPVLVKTAKAQET ASSIKNTLSNLLSFWK
72.	MAVPSKEKKRGCIIVVIEFKAFFVDKDESGKVTPTFKQLSPDLPGKDVLIKVHYSGINY KDALATQDNNAVVSYPMPIDLAGTIVESEAPGFEKEGEQVIVTSYDLGVSHYGGFSEY ARVSEWIKLPTDLTLESMTIYGTAGYTAGLAIERLEKVGMMNIEDGPVLVRGASGGVGT LAVLMLNELGYKVIASGTQKQDVSDQLELGAKEVIDRLPVEDDHKKPLASSTWQACVDPV GGEGINVTTRLNHSGSIAVIGMTAGNTYTNVSPPHILRGVNLIGDSVFTAMKLQRVW RRLAKDLMPENLHBIKQVITFDELPEQLNKVIKHENKGRIVIDFGVDK
73.	MKIVTATTLTAGIGTALVGOAYHADAENYTNVNNYNTTQTTTTTTTTTTTTSSISHS GNLYTAGQCTWYVYDKVGGEGISTWGNANNWAAAAGGAGFTVNHPTPSKGAIQSSEGPFG HVAYVESVNSDGSVTISEMNYSGGPFVSSSRTISASEAGNYNIHI

74.	MKKIATATATAGFATIAIASGNQAHASEQDNYGYNPNPDTSYSYTYTIDAQGNHYHTWK GNWHPSQLNQDNGYSSYYNYNGYNNYNNYNGYSYNNYSRYNNYNNNQSYNNYNNYSYN TNSYRTGGLGASYSSTSSNNVQVTTTMAPSSNGRSISSGYTSGRNLYTSQCTTYVVFDRVG GKIGSTWGNASNWANAARAGYTVNNYTPKAGAIMQTTQGAYGHVAVYESVNSNGSVRVSE MNYGYGPGVVTSTRTISASQAAGYNFIH
75.	MSMTYRIKKWQKLSITITLIMAGVITLNGGEFRSVDKHQIAVADTNVQTPDYEKLRNTWLD VNYGYDYDENNPDMKKKPDATKEATNLLKEMKTESGRKYLWSGAETLETSSSHMTRTY RNIEKIAEAMRNPKTTLNTDENKKVKDALEWLHKNAYGKEPDKKVKELSENFTKTTGKN TNLWWDYIEIGTPKSLTNTLILNDQFSNEEKKKFTAPIKTFAPDSKILSSVKGAEALAK GGNLVDISKVKLLECIIEEDKDMKKSIDSFNKVFTXVQDSATGKERNGFYKDGSVIDHQ DVPYTGAYGVVLEGISOMPMIKETPFNDKTQNDTTLKSWIDDGFMPLIYKGMMDLSR GRAISRENETSHSASATVMKSLRLSDAMDDSTKAKYKIVKSSVESDSSYKQNDYLSY SDIDMKKSLMTDONSISKNGLTQQLKIYNDMDRVTYHNKDLDFAGLSMTSKNVARYESIN GENLKGWHTGAGMSYLYNSDVHYHDFWVADMKRLSGTTTLDNEILKDTDDKSSKTF VGGTQVDDQHASIGMDFENQDKTLTAKKSYFILNDKIVFLGTGIKSTDSSKNPVTIENR KANGYTLTDDQOTMNSDNQENNSVFLESTDTKKNIGVHFLNPKKITVKESHTGKWKKEI NKSQKDTQKTDEYVEVTVQKHSNSDNKYGVVLYPGLSRDVFKTKKDEVTVVKQEDDFHVVK DNESVWAGVNYNSSTQTFDINNKTVEVKAKGMFILKKDDNPFYECFYNPESTNSASDIE SKISMTGYSTINKNTSTSNESGVHFEITK
76.	MNDLKQFLYIALVCGVIAGLGAFLHIPQYPSMTIPRIVAILGIIISAMLTFKDKQISASLK FSALLINVLPLCGTFVASN
77.	VSRMSYHWFKKMLLSTSLILSSSSGLATHVTREKADNLNGEKPPTNLNHNITSPSVNS EMNNNETGTPHESNQTGNEGTGSNSRDANPDSNNVVKPDSNNQNPSTDSKPDPPNNQNPSPN PKPDPDNPKPKPDPKPDPKPKPNPKPDPDNPKPNPKPDPKPKPNPKPNPKPDPKPKP KPNPNPKPDPKNPNPNPKPDPKPDQPGDSNHSGGSKNGGTWNPASDGSNQGQWQPNNGQGN SQNPTEGDFVSQRFALALANGAYKYNPYILNQINKLGDYGEVTEDEIYNIIRKQNFSGNA YLNGLQQQSNYFRFYFNPLKSEYRYNRLDEQVLALITGEIGSMPLKKPDKPDSKQRS FEPHEKDDFTTVVKQEDNKKSASTAYSKSLALVCMMVVFISIMLFLFVKNRKKKKKNES QRR
78.	MKNKRVLIIASSLSCAILLLSAATTQANSAHKDSQDQNKKEHVDSQKDKRNVNTNKKDN STAPDDIGKNGKITKRTETVYDEKTNILQNLQDFIDDPYTDKNVLVKKQGSIHNLKF ESHKEEKNNSMLKYPSSEYHVDQVQRNRKTEILDQLPKNKISTAKVDSTFSYSSGGKFDS TKGIGRTSSNSYSKTISSYNQNYDTIASGKNNNWHVHWSVIANDLKYGGEVKNRNDELLE YRNRTRIAITVENPELSFASKYRYPALVRSGFNPEFLTYLSNEKSNEKTQFVEPYTRNQDIL KNRPGIHYAPPTLEKNKDGQRLLIVTYEVDWKNKTVKVVDKYSDDNKPKYKEG
79.	MYTRTATSDSQKNITQSLQFNFLTEPNYDKETVFIKAKGTIGSGLRILDPNGYWNSTLR WPGYSYSVSIQNVDDNNNTNVTDPAKNQDESREVKYTYGYKTGGDFPINRGGLTGNITKE SNYSETISYQQPSYRLLDQSTSHKGVGWKVEAHLINNMGHDTROLTNDSDNRTKSEIF SLTRNGNLWAKDNFTPKDKMPVTVSEGFNPEFLAVMSHDKDKGKSQFVHYKRSMDFEK IDWNRHGFWGYNSGHNHVDKKEEKLALYEVDWKTNNVFKVVLNDNEKK
80.	VVKFMNYPNGKPYRKNSAIDGGKTAFAFSNIEYGGRGMSLEKDIEHSNTFYLKSDIAVIH KKPFPVQVNNVNYPKRSKAVINEAYFRTPSTTDYNGVYQGYIDFAKETKNKTSFPLNN IHDQVEHMKNAQQKGIIVFLMIRFKTLDEVYLLPYSKFEVFWKRYKNLIXSITVDEIR KNGYHIPYQYQRLDYLKAVDKLLDESEDRV
81.	VNTTKAALHGDVKLQNDKDHAKQTVSQLAHLNNAQKHMEDTLIDSETTRTAVKQDLTEAQ ALDQMDALQQSIADKDATRASSAYVNAEPNKKQSYDEAVQNAESIAGLNNPTINKGNV SSATQAVISSKNALDGERLAQDKQTAGNSLNLHDQLTPAQQAALENQINNATTRGEVAQ KLTEAQALNAQAMEALRNSIQDQQQTEAGSKFINEDKPKQDAYQAAVQNAKDLINQTNNT LDKAQVEQLTQAVNQAKDNLHGDQKLADDKQHAVTDLNLQNLGNLPORQALSESQINNAAT RGEVAQKLAELAKALDQAMQALRNSIQDQQQTESGSKFINEDKPKQDAYQAAVQNAKDLIN QTGNPTLDKQSQVEQLTQAVTTAKDNLHGDQKLARDQQQAVTTVNALPNLNAHQQAALTD INAAPTRTVEAQHVQVATLHDMETLKNKVQVNTDQAQPNYTEASTDKKEAVDQALQA AESTTDPNTGNSNANKDAVDQVLTQKLEKENELNGNERVAEAKTQAKQTTIDQLTHLNADQI ATAKQNIQDQATKLQPIAELVDQATQNLQSMQDQLQAVNEHANVEQTVDTQADSDKQNAV KQATADAENVLKKQNAKQVQDQALQNLNNAKQALNGDERVALAKTNGKHIDQLNALNNA QDQGFKGRIDQSNLDLQIQIIVDEAKALNRAMDQLSQETDNEGRTKGSTNYVNAQTQVK QVYDETVDKAKALDKSTGQNLTAQQVILKNDAVTAACKALNGEERLNNRKAELQRLDQ LTHLNNARQLAIQQINNAETLNKASRAINRATKLDNAMGAVQQYIDEQHLGVISSTNYI NADDNLKANYDNAIANAAHELDKVQGNAAIAKAEAEQLKQNIIDAQNALNGDQNLANAKDK ANAFVNSLNLNQQQDLAKHKAINNADTVSDVTDIVNNQIDLNDAMETLKHLDNEIPNA EQTVNYQNADDNAKTNFDDAKRLANTLLNSDNTNVNDINGAIQAVNDATHNLNGDQRLQD AKDKAIQSINQALANKLKEIEASNATDQDKLIAKNKABELANSIINNINKATSNQAVSQV QTAGNHAIQVHANEIPKAKIDANKDQVQKQALIDEIDRNPNLTDKEKQALKDRINQIL QQGHNGINNAMTKEEIEQAKAQLAALQDIDKLVKAKEDAKQDVQVQALIDEIDQNP LTDKEKQALKDRINQILQQGHXDXINAMTKAEIEQAKERLAQALQDIDKLVKAKEDAKND IDKRVQALIDEIDQNPNTDKEKQALKDRINQILQQGHNDINNALTKEEIEQAKAQLAQA LQDIDKLVKAKEDAKNAIKALANAKRDQINSNPDLTPEQKAKALKEIDEAEKRALQNVN AQITDQLNRGLNLGLDIDRTHVWEVDEQPAVNEIFEATPEQILLVNGELIVHRDDITEQ DILAHINLIDQLSAEVIDTPSTATISDSLTAKVBTLLDGSKVIIVNVPVKVVEKELSVVK QQAIESIENAAQQKINEINNVTTLTLEQKEAALAEVNLKQQAIDHVNNAVDHVSVEEQ QBEQAHIEQFNPQFTIEQAKSNAIKSIEDAIQHMIDEIKARTDLTQKEQEAIAKLNQ KEQAIQAIQRAQSIDEISEQLEQFKAQMAANPTAKELAKRQEAISRIKDFNEKINSI RNSEIGTADEKQAAMQINEIVLETIRDINNAHTLQQVEAALNNGIARISAVQIVTSDRA QSSSTGNESSHLTIGYGTANHFPNSSTIGHKKKLEDDEDDIDPLHMRHFSNNFGNVIKN AIGVVGISGLASFVFFIAKRRRKEDEEBLEIRDNKNDSIKETLDDTKHLPLFAKRRR KEDEEDVTVEEKDSLNGESLDKVKHTPFPFKRRRKEDEEDVEVTNENTDEKVLKONEH SPLLFAKRRKKEEDVETTSIESKDEDVPLLLAKKNQKDNQSKDKKSASKNTSKRVAA KKKKKKAKKNK

[illegible]

91.	MGFLSKILDGNNKEIKQLGLADKVI ALEEKTAI LTDEEIRNKTQFQTELADIDNVKKQ NDYLDKILPEAYALVREGSKRVFNMTPYKVQIMGGIAIHKGDIAEMRTGEGKTLTATMPT YLNALAGRGVHVITVNEYLSVQSEMAELYNFLGLTGLNLNSKTTEEKREAYAQDITY STNNELGPDYLRDNMNVNSEDVRMLPHFAIIDEVDSILIDEARTPLIISGEAKSTSLY TQANVFAKMLKQDEYKYDEKTKAVHLTEQGADKAERMFVENLYDVQNVDSHINTAL RAHVTLQRDQVYVMDGEVLIVDQFTGRTPGRRFSEGLHQAI EAKGVQIQNESKTMAS ITFQNYPRMYNKL AGMTGTAKEEEEFNINMTVTQIPTNKPVRNDKSDLIYISQK GK F DAVVEDVVEKHAGQPVLLGTVAETSEYISNLLKKRGIRHDVNLAKNHEREABIVAGA GQKGAVTIATNMAGRGTDIKLGEGVEELGGLAVIGTERHESRRIDDQLRGRSGRGQDKGD SRFYLSDQDELMIRFGSERLQKMSRLGLDDSTPTESKMSRAVESAQKRVGNNFDRK RILEYDEVLKQREIYNERNSTIDEEDSSQVVDAMLRSTLQRSINYINTADDEPEYQP FIDYINDIFLQEGDITEDDIKGKDAEDI FEVVWAKIEAAYQSQKDILEEQMNEFERMI LL RSIDSHWTDHIOTMDQLRQGIHLRSYAQQNPLRDYQNEGHELFDIMQNI EEDTCKFILK SVVQVEDNIEREKTEFGEAKHVSADGKVKPKPIVKGDQVGRNDDCPGSGKKFKNC HGK
92.	MRESMSNQNYDYNKNEGDSKKKMSTAKVVSIA TVLLGLLVFAI FAYVDHSHKAKERM LNEQKQEQEKQKQKNAEKERKKKQEEKEQNELDSQANOYQQLPQQNQYVPPQQQAP TKORPAKEENDKASKDESKDKDKASQDKSDDNQKKTDDNKQPAQKPPQPPQPTPKPNN NQONNQSNNQAKPPAQONSQSTTNKQNNANDK
93.	MNMKKKEKHAIRKKSIGVASVLVGLTIGFGLLSKKEADASENSVTQSDSASNESKSNDS SVSAA PKTDDTNVSDTKTSSNTNNGETSVANPAQOETTQSSSTNATTEETPVTGATTT TINQANTPTQSSNTNAEELVNQTSNETTNDTNTVSSVNSPONTNAENVSTQDTST EATPSNNESAPQSTDASNKDVVNQAVNTSAPRMRAFSLAAVAADAPAAGDTITNQLTNVT VGIDSGTIVYPHQAGYVKNLYGFSVPNSAVKGDTPKIVPKELNLMGVSTAKVPPIMAG DQVLANGVIDSDGNVITFTDYVNMKDDVKATLTPAYIDPENVKKTGNVTLATGIGSTT ANKTVLVQYKYGKGFYVLSIKGTIDQIDKTNNTYRTIYVNPSGDNVIA PVLGTGNLKPNT DSNALIDQONTSIKVKVDNAADLSESYFVNPNFEDVTNSVNIITFPNPNQYKVEFNTPD DQITTPYIVVVNGHIDPNSKGDALRSTLYGYNSNI IWRSMWDNEVAFNNGSGSGDGDID KPVVPEQPDEPGEIEPIPEDSDSDPGSDSGSDSDSDSDSDSDSDSDSDSDSDSDSDSD SDSDSASDSDSDSASDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSD SDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSD SDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSD SDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSD SDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSD SDSGSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSDSD SEDEANTSLIWGLLASIGSLLLPFRKKENKDKK
94.	MNSNHAKASVTEVDKFFVVPESGINKIIIPAYDEFKNSPKVNVSNLTDNKNFVASEDKLN KIASD SAASKIVDKNFVVPESKLGNI VPEYKEINNRVNVATNNPASQQVDKHFVAKGPEV NRFTIQKNVNHHTITQTHYKVKITSYKSTHVHGHVNAKDSINKHFIKVPSESPRYTHP SQSLI IKHFAVPGYHAHKFVTPGHASLIKINHFCVVPQINSFKVIPPYGHNSHRMHVPSF QNNTTATHQNAKVNKAYDYKYFYSYKVVGKVKYFSFSQSNYGIKGPSLNKKNVNYQYA VPSYSPHYVPEFGSLPAPRV
95.	LEHTIMKRTIAKTSALGLLTGAI TVTTQSVKAEKIQSTKVDKVP TLKAERLAMINIT AGANSATTQAANTRQERTPKLEKAPNTNEEKTSASKIEKISQPKQEQKTLNISATPAPK QEQSQTTEBTTPTKTKVTPPSTNTPQPMQSTKSDTPQSPKIQAQTDMTPKYEDL RAYY TKPSEFEKQFGFMKLPWTTRVFMNVI PNRFIYKIALVGKDEKKYKRGDPYDNI DVFIVLE DNKYQLKYSVGGITKTNSKKVNHKVELSITKKNQGMISRDVSEYMITKEELSLKELDF KLKQQLIEKHNLVGNMGSSTIVIKMKNGGKYTFELHKKLQEHMAGTNI DNIEVNIK
96.	MTTIKTSNLGFPRLGRKREWKAI ESYWAKKISKEELDQTLTDLHKNELLLQKYHLSI PVGDFSLYDHLIDTSLLFNIIIPERFQGRITDDLLDFIARGNKHVASALIKWENTNYHY IVPEWDNVEPKVSRNVLDRFKYQSLNVNAHPVIVGPIITFVKLSKGGHQTFEKVKTL PLYKEVFESLIDAGABYIQVDEPILVTDSESYENITREAYDYFEKAGVAKKLV IQTYFE RAHLKFLSSLPVGGIGLDFVHDNGYNLQIEAGDFDKSKTLYAGIDGRNVWASDI EAKK VLIDKLLAHTNELVIOQSSLLHVPVSLDDETLDTSVGEGLSFATEKLDELDALRLFNQ NDVSQYDKLKARYERFQNSFKNLDYDFESVRTSRQSPFAQRIEQQKRLNLPDLPTTI GSFPQSRVVRKYRADWKNKRITDEAYETFLKNEIARWIKIQEDIGLDVLVHGEFERNDMV EFFGEKLQGLFVTKFGWVQSYGSRVAKPPIIYGDVWKTAPLITVDETVYQSLTDKPVKGM LTGPVTILNWSFPERVLDPRKVVDQIALAINEEVLALAEAGIKVQVDEPALREGLPLRS EYHEQYLDKAVLSFKLATSSVRDETQIHTHMCYSQFGQI IHAHDLDAVSIETSTRSHG DLIKDFEDINYDLGIGLGVYDIHSPRIPTKEEITTAIRSLQIDRSLFVWNPDCGLKTR KEEEVKDALTVLVNAVKAQRQ
97.	MSDTYKSYLVAVLCFTVLAI VLMPLYFTTAWSIAGFASIA TFIIFYKEYFYEE
98.	MLRGQEERKYSIRKYSIGVSVLAATMFVVS SHEAQASEKTSTNAAQKETLNOPEQGN AITSHQMQSGKQLDDMHKENGKSGTVTEGKDTLQSKHQSTQNSKTIRTQNDNQVKQDSE RQGSQKQSHQMNATNTERQNDQVQNTTHAERNQSGSTTSQSDNDVKSQPSIPAQKVI PNH DKAAPSTTPPSNDKTA PKSTKAQDATTDKHPNQDTHQPAHQI IDAKQDDTVRQSEKQK QVGDLSKHIDGQNSPEKPTDKNTDNKQLIKDALQAPKTRSTTNAADAKKVRPLKANQVQ PLNKYPVVVFVHGFLGLVGDNAPALYPNYWGGNKFKVIEELRKQGYNVHQASVSAGSNYD RAVELYYYIKGGRVDYGAHAAYGHERYGYKTYGIMPWPGKKVHLVGHSMGGQITRL MEEFRLNGNKEEIA YHKAHGGEISPLFTGGHNMVASITTLATPHNGSQAADKFGNTEAV RKIMFALNRFMGNKYSNIDLGLTQWGFQKLPNESYIDYIKRVSKSKITWSDDNAA YDLTL DGSALNNMTSMNPNTTYTGTGVSSHTGPLGYENPDLGTFILMATTSRIGHDAREEWR KNDGVVPVVISLHPSNQPFVNVNTNDEPATRRGIWQVKPIIQGWD
99.	MIHLIKGKMHTVLCIHLNKGVALMNQYHSNAQOPSAWRFVYSLVGILCFFIIPFTINGN NTIFVDHVLHAI RSIIGPLMPYVALIMILIGTALPIVRRFTMTSITNLVITLKFVAGAMI GIMYVFKIGPSILFKANYGPFLFEKLMPLSILIPVGAIALSLLVGYGLEFVGVMYMEPI MRPIKFTPGKSAVDAVSFVGSYSLGLLITNRVYKQGMYNKREATI IATGFTVSATFMI IVAKTIGLMPHWNLYFWITLVTITVVTAITAWLPPISNESTEYNGQEGEVEALEGSR KTAFAEAMKQNALTPSLVKNVVDNLKDGLEMTVGILPSILSIGFLGLIVANYTPPIDWLG YIFYPFIYIFPIADQALLAKASAI SIVEMFLPSLLVTKAAMSTKPVVGVVSVSAIIFSA LVPCILATEIKIPWKLI IIFLRLVALSLLITIPVALLIFG
100.	MYIMKKTILLTMTTLTFSMSPNSAQAYTNDSKTLEAKKAPNAQFKVKNKDTGAYTYTY DKNNTPNNNNQSRNTNDNHQANQRDLNNNQYHSSLSGQYTHINDAIDSHTPPQTSPSN PLTPAI PNVEDNDDDELNNAF SKDNKGLITGIDLDELYDELQIAEFNDKAKTADGKPLALG NGKI IQPLITSKNLYTAGQCTWYVFDKRAKDGHITSTFWGDAKNWAGQASSNGFKVDR HPTRGSILQTVNGPPGHVAYVEKVNIDGSILISEMNWIGEYIVSSRTISASEVSSNYIH

101.	MEVSSMKPYIQLVFKQWLQYILLVTTIVIALVLIGIGYRVAHDNFKIPITIQDLDDQTTA SKSFVNKIKQSDYVTIKKVDDESYIEDDVTKKEAILSMQIPKGFSSQKLKENRLKETIQ YGRDDFIGGIAVEIVSSSLYEQQIPNIIYEHLEDMKQHSIDANKSVHKKHTPESKIKFV SLTKQAQHSISISLIFAVILFVSAVQVVLHYRLNQQAALQRLSQYHLSRFLKYSTYVMTF TILLLLVLAVALSLYSQPLSLIFYLKSLLLILYBIGIVFILPHIQTISHRLFMFTFIYAL AMGIVYLIIFM
102.	MIETEMNFFDIHKIPNKGIPLSVQRKLWLRNFMQAFVFFVVMAMYLIRNNFKAQPF LKEBIGLSTLELGYIGLAFSITYGLGKTLGTFVDFGRNTRKRIISFLLILSAITVLMGPFV LSYFGSVMGLLIVLWGLNGVFSVGGPASYSITSRWAPRTKRGYLGFWNTSHNIGGAIA GGVALGANVFFHGNVIGMFIFFSVIALLLIGIATLFIGKDDPEELGWNRAEBIWEPEVDK ENIDSQGMKTKEIFKKYILGNPVIWILCVSNVFFVYIRIGIDNWPALVSEHLHFSKGD VNTFFYFRIGALVASLLWGYVSDLLKGRRAIVAIGCMFMTFVVLFTYNTATSVMMVNISL FALGALIFGPQLLIGVSLTGFVPKNAISVANGMTGSFAYLFGDSMAKVGAAIADPTRNG LNIFGYTLSGWTDVFI VFYVALFLGMILLGIVAFYEEKIRSLKI
103.	MTRKKNLKATGIYSFIAMMFVILYPLLWTFGISLNPPTNLYGAKMIPDNATFKNYAFL LFDDSSQYLTFWKNTLIVASANALFSVIFVTLTAYAFSRYRFVGRKYGLITFLILQMPFV LMAMVATYILNTIGLLDLSLGLTLVYIGGSI PMNAFLVKGYFDTIPKELDESAKIDGAG HMRFLQIMLPLAKPILAVVALFNFMGPFMDFI LPKILLRSPKFTLAVGLFNFINDKYA NNFTVFAAGAMIAPVIAIVFLFLQRYLVSLTGTGATKG
104.	NMENSTTEARNEATMHLDEMTVEEALITMKNEDQVPLAVRKAI POLTKVIKKTIAQYKK GGRLIYIGAGTSGRGLVLDAAECVPTFNTDPHEITIGIAGGQHMTMAVEGAEDHKLAIE EDLKNIDLTSDVVGIAAAGKTPYVIGGLTFANTIGATTVISICNEHAVISEIAQYFVE YKVGPEVLITGSTRLSGTAKQLILNMISTITMVGVGKVDNLMIDVKATNQKLIDRSVRI IQEFCATTYDEAMALYQVSEHDVKVATVMGCGFSKEATRRLLNNGDVIKRAIRDROP
105.	LQYIIRYIMMTLQIHTGGINLKKKNIYSIRKLGVGIAVSITLGTLLISGGVTPAANAQHD EAQONAFYQVNLNPNLADQRNGFIQSLKDDPSQSANVLGBAQLNDSQAPKADAQNNF NKDQQAFAFYEILNMPNLNEAQRNGFIQSLKDDPSQSANVLGEAKKLNESQAPKADNNF EQQNAFYEILNMPNLNEEQRNGFIQSLKDDPSQSANLLSEAKKLNESQAPKADNKFNEQ QNAFYEILHLNPNLNEEQRNGFIQSLKDDPSQSANLLAEAKKLNDAAQAPKADNKFNEQ AFYEILHLNPNLNEEQRNGFIQSLKDDPSVSKELAEAKKLNDAAQAPKEDNNKPGKEDNN KPGKEDNNKPGKEDNNKPGKEDGNKPGKEDNNKPGKEDGNKPGKEDNNKPGKEDGNKPGK EDGNKPGKEDGNVHVVKPGDVTNDIAKANGTTADKIAADNKLADKNIKPGQELVDDKK QPANHADANKAALPETGEENPFI GTTVFGLSLALGAALLAGRRREL
106.	MDKKSEKRGIKMTVQSAVIHIFPCVRICTYCDFNKYFIQNPQVDEYLDALITEMSTAKYR ILKTMVYGGGTPTALSINQLERLLKAIIRDFTTITTEYTFEAPDELTKKVKQLLEKYGVK RISMGVQTFKPELLSVLGRTHNTEDIYTSVLNAGIKSISLDLMYHLPKQITIEDFEQS LDLALDMDIQHTSSYGLILEPKTOFYNNYRGLLKLPNEDLGADMYQLMSKIEQSPFHQ YEISNFDLDGHESEHNKVVWFNEEYGFAGASGYVDGVRVTNINPVNHYIKAINKESKA ILVSNKPSLTERMEEMFLGLRLNEGVSRRFKKFDQSI ESVFGQTINNLKEKELIVEK NDVIALTRNGKVI GNEVF EAF LND
107.	atgaatgtattagtaatttggtgctggtggacgagagaacatgcacttgcatataaactta caatcgaatctagttaaacaagtgtttgtcattccaggtaagtgaggcaatgacacccata gctgaagtacacactgaaatttcagaacctgatcatcaagcgatactagattttgtctaa cggaacaaatggtgattgggttagttataggtccagaacagcgctaatgtatggattagca gacattttacagcgaaatggtttcaaatggtttgttccaaataagcaagcagctcaaatc gaaggctcaaaaattatttgctaaaaagataatggaaaaataatattccaactgctgat tataaagaagtgtgagcgaaaaaggatgctttaacatatattgaaaactgtgaattgccc gttgtgttcaagaaagatgggttagctgctgggaaggcgcttattattgcagatactatt gaagcagcgagaagtgtctattgagattatgtatggtgatgaagaagaaggtagctgttga tttgaacgtttttagaaggtgaagagttctcgctaattgacatttgtaattggtgattga gcagtagctttcgactgtattgcacaagatcataaacgcgctattgatcatgatgaagga ccaaataactggtggtatgggggcttattgtccagtaccacatatattagtgacgatgttta aaacttacaagaatgaacaattgcacaacccattgcaaggcaatgcttaataagaggttat caattcttcggtgtattatacatgttggtctattttaactaaagatggtccaaagtaata gaatttaagtcggcttttggtgatcctgaagctcaagtattattaatgctcagtggaaggt gatttaagtcagcatattattgatttagatgaaggaacgactgaattcaaatggaaa aatgaatctatttaggggtcatgttggcatcaaaaggatatcctgatgcataatgaaaaa gggcataaagtaagtggtttgat ttaaatgaaaactattttgttagtggtatgaagaag caaggtgatacctttgttacttcaggtggttagagttatacttgccatcggaagggtgac aatgtacaagatgcacagcgagacgcatacaaaaagtatcacaaatacaaaagtgaccat ttattctatcgtcatgacattgccaataaagcactacaacttaaa
108.	MNVLVI GAGGREHALAYKLNQSNLVKQVFI PGNEAMTPIAEVHTFISEPDHQAILDFAK RQNVDWVIGPEQPLIDGLADILRANGFKVFGPNKQAAQIEGSKLFAKKIMEKYNIPAD YKEVERKKDALTYIENCPLPVVVKDGLAAGKGVIIADTIEAARSAIEMYGDEEGTVV FETFLGEEFSLMTFVNGDLAVPFDICIAQDHKRAFHDDEGPNITGGMGAYCPVPHISDDVL KLNETIAQPIAKAMLNEGVOFFGVLYIGAILTKDGPVIEFNARFGDPEAQVLLSRMES DLMQHIIDLDEGRTEFKWKNESI VGVMLASKGYPDAYEKHGKVS GFDLNENYFVSLKK QGDFTVTSGRVILAI GKGDNVQDAQRDAYKVSQIQSDHLFYRHDIAKALQLK
109.	atgcaaccacatttaatatgtctagacttagacggaacattattaacagatacaaaagaa atttcatcatataactaaacaagtattaaatgaattacaacaacgtggacaccaaattatg attcgactggcagaccttatcgtgcaagtcaaatgtattatcatgaattaaatttaacg acaccaattgttaattttaatggcgcttacgtacatcacccctaaagataaaaacttcaaa acttgccatgaatttttagatttaggcacgcacaaaacattattcaaggattacaacaa tatcaagtatcgaatattatagcagaagtgaagattatgttttcattacaatcatgat ccaagattttgaaggtttttcaatgggtaatccaagaattcaaaactggaattttactt gtccacttgaaagaatccccctaccccaatttttaattgaagccgaagaagtaaaatacct gaaatcaaaaatagcttactcatttttatgcccacatattgagcatcgacgctggggc gcaccattccctgtcattgaaattgtaaaacttggtattataaagcaagagcgattgag caagttagacaatttttaaatattgaccgaataatattattgcattcggtgatgaagat aatgatattgaatgatcgagtagcgcggtcacggtgttgcattggaaaatggtttgcaa gaacttaagatgtagcgaacaattacattcaacaataatgaagatggcattggtcgga tattggaatgatttctttaaatttaaatattagatatattactgt
110.	MQPHILCLDLDGTLNLDNKEISSYTKQVLNELQQRGHQIMATGRPYRASQMYHELNL TPIVNFNGAYVHHKPKDNKFKTCHEILDGLIAQNIICGLQOYQVSNIIAEVKDYVFINNHD PRLFEFGSMGNPRIQTGNLLVHLKESPTSLIEABESKIPEIKNMLTHFYADHIEHRRWG APFPVIEIVKLGINKARGIEQVRQFLNIDRNIIAFGDENDIEMIEYARHGVA MENGLQ ELKDVANNITFPNNEDGIGRYLNDFFNLIRYYC

111.	gtgaaaccaatgggctaagtctaatagttaaagacatcggttttaattggagccgggtgactt agcacaacatttgggttcaatgttaaagaatggagccagactggaatatccacgtttac gaacgcttggatcgctcctgcaatcgaaagttaaagcgaagaaataatgctggtacgggt catgcagcatatgtgagtgaaactacacagttttacaacctgaggtttctatcgacatc gaaaagcggaagtgaattaacgaagagtttgagatttcaaaaacaattctggggtcactta gtgaaaagcggtagcatcgagaacccagagaatttatcaatccattaccacacatcagt tatgttagaggtaaaaacaatgttaaattcttaaagatcggtacgaagcatgaaagct ttccctatgttcgataatatcgaaataactgaagacatcgaagtaataaaaaatggatt ccattgatgatgaaagccgtgaagataaccctggtatcatggcggcaagtaaaatgac gaaggtacagatgtaaaactcgggtgaattaacacgtataaatggctaaaagcatgaaagca catccaaatgctacagtgcaatttaaccatgaagttggtgattttgaacaattatcaaat ggtcaatgggaagttactgttaaaaatcgcttaactggtgagaaattcaaacagtaact gactacgtattcatcggtgctggcgggtggagcaattccattattacaaaaacagggtatc cctgaagtaaacatttgggtggatttccctatcagtggttcaattcttagcttgtacaaac ccagaagttattgaacaacacgagtccaaagtttatggttaaagagccacctggtacacca ccaatgactgtaacctatttagatagcgttaccttgatggttcaagaacattattattt ggaccatttctgaatttggacctaattcttgaaaaatgggttcttaacttagatttattc aagtcgtttaaacaatatacaacttatttagcagcagcaggttaaaaacttacct tcaattaaatactcatttgaccaagtaattatgacaaaagaaggttgatgaaccactta cgtactttctatccagaagcagcgaatgaagattggcaattatatactgctggtaaacgt gtacaagttatcaagatacacctgaacacggttaaggattcatccaattcgggtacagaa gtggttaactcacaagaccacactgtaattgcattattaggtgaatcaccaggggttca acttcagtttcagttgctgtagaagatttagaacgtaacttccctgaatacaaaactgaa tgggcacctcaaaatagaaaaatgattccatcatacgggtgaatcatttaattgaagcga aaattaatgagaaaaatccgtaaacaaacttcaaaagacttagaattaggttactacgaa aac
112.	MKMPAKSNSKDIVLIGAVLSTTFGSMLEKEPDWNIHVYERLDRPAIESSNERNNAGTG HAALCELNVTVLQPDGSDIEKAKVINEEFETSKQFWGLVKSISIENPREFINPLPHIS YVRGKNVVKFLKDRYEAMKAFPMFDNI BYTEDIEVMKKWIPLMMKGREDNPGIMAASKID EGTDVNFGELETRKMAKSIEAHPNATVQFNHEVVDFEQLSNGQWEVTVKNRLTGEKFKQVT DYVFTGAGGGAIPLLQKTGIPESKHLGGFPISGQFLACTNPQVIEQHDKVKYKPEPGTP PMTVPHLDTRYIDQRTLLFGPPANVGPFLKNGSNLDLFKSVKTYNITLLAAAVKNLP LLKYSFDQVIMTKEGCMNHLRTFYPEARNEWQLYTAGKRVQVIKDTPHEHGKGF IQFGTE VUNSDQHTVIALLGESPGASTSVSVALEVLERNFPYKTEWAPKIKKMI PSYGESLIEDE KLMRKIRKQTSKDELGYEN
113.	atgctagagggcacaattttttactgatactggacaacatagagataagaatgaagatgcg ggctggtattttttataatcaaaactaatcaacaacttttagttctgtgtgattggtatgggt ggccataaagcaggagaaagtggcaagtaaatttgttacagatgagttgaaatcccgtttt gaagcgggaaaattcttagaacaacatcaagctgaaaattggttgcgtaataatataaaa gataaaaattttcagttatatactatgcacaagaaaatgcagaataaaaggtatgggt acaacatggtgtttgtgactgtttttgaaaaatcagttgtgtagacaaatgctggtgat cttagagcctatgttttaataatagtcgacaaaattgaacaaattactagtgtactcattt gttaatcatctgttttaacgggtcaaaattacgcgggaagaagcatttacacatccacaa cgttaattattacgaaggtgtagggcacagataaacgtgtgagtcagatttggttatt aagcgattaaattttatgattattttatttaaatccagatggattaaactgattatggt aaagacaatgaattaaagcgtttgttagtaaaagaaggtacaatagaagatcatgggtgat caattaatgcaattggcatttagataaccattcgaaagataacgttactttcatactcgcg gctattgaaggtgataaagta
114.	matdtdgrdkndaggyntnvcdgmghkagvaskvtdksranhanwrnnkdnyhyanyk mgmttcvcavksvvanvgdsrayvnsrtdshsvnhvtgtathrntkvmgtdkrsdkrny dynsdgtdyvkdnkrvkgtdhgdmdnhskdntvaagdkv
115.	atggcacaagaaaaaattcgatcggttctaagaacatgccaatatcggtactatcggtcac gttgaccatgggtaaaaacaacatttaacagcagcaatcgctactgtattagcaaaaaatgggt gactcgtatcgcaacatcatatgacatgattgacaacgctccagaagaaaaagaacgtggt atcacaatcaataacttctcacattgagtagcaaaactgacaaacgtcactacgctcacgtt gactgcccaggacacgctgactacgttaaaaacatgatcactggtgctgctcaaatggac ggcggtatcttagtagtatctgctgctgacgggtccaatgccacaaactcgtgaacacatt ctttatcacgtaacgttggtgtaccagcatttagtagtattcttaacaaaagttgacatg gttagcagatgaagaattattagaatttagtagaaatggaagttcgtgacttattaagcgaa tatgacttcccaggtgacgatgtacctgtaatcgctggttcagcattaaagcttttagaa ggcgatgctcaatcagaagaaaaaatcttagaattaatggaagctgtagatacttacatt ccaactccagaacgtgattctgacaaaccattcatgatgccagttgaggacgtattctca atcactggttcgtggtactgtgtgacagggcgtgtgaaactggttcaaatcaaaagttggt gaagaagttgaaatcatcggtttacatgacacatctaaaacaactgttacaggtgttgaa atggttcggtaaattattagactacgtgaagcgtggtgacaacattggtgcattattacgt gggtttgctcgtgaagcgtacaacgtggtcaagttatagctgctcctggttcaattaca ccacatactgaattcaagcagaagttatagctattatcaaaagacgaaggtggacgtcac actccattcttctcaaaactatcgctccacaattctatttccgtactactgacgttaactggt gttgttccactaccagaaggtactgaaatggttaatgcttgggtgataacgttgaaatgaca tagaattaatcgctccaatcgcgattgaagacggtactcggttctcaatccgtgaaggt ggacgtactgtaggatcaggcgttggttactgaaatcattaaa
116.	MAKEKFRSKEHANIGTIGHVDHGKTTLTAATVLAKNQDSVAQSYDMIDNAPEEKERG ITINTSHIEYQTKRHYAHVDCPGHADYVKNMITGAAQMDGGILVVSAAADGPMPTREHI LLSRNVGPALVPLNKVDMVDDELELLELVEMEVRDLSYDFPGDDVPVIAAGSALKALE GDAQYEEKILELMEAVDTYIPTPERDSKPFMPVEDVFSITGRGTVATGRVERGQIKVG BEVEIIGLHDTSKTIVGVEMFRLLDYAEAGDNIGALLRGVAREEIQRGQVLAAPGSIT PHTEFKAEEVVLKDEGGRHTPFFSNYRQFYFRTTVDVTGVVHLEPGTEMVMPGDNVEMT VELIAPIAIDEGTRFSIREGRTVGSVGVTEITE

117.	atgactaagagtgctttagtaacaggtgcatcaagaggaattggacgtagtattgcgtta caattagcagaagaaggatataatgtagcagtaaaactatgcaggcagcaaaagagaaagct gaagcagtagtcgaagaatacaagctaaaggtgttgaaagttttgcgattcaagcaaat gttgccgatgcatgaaaaagactaagagtgctttagtaacaggtgcatcaagaggaattg gacgtagtattgcgttaccaatagcagaagaaggatataatgtagcagtaaaactatgcag gcagcaaaagagaagagctgaagcagtagtcgaagaatacaagctaaaggtgttgaaagtt ttgcgattcaagcaaatgttgccgatgctgatgaagttaaagcaatgattaaagaagtag ttagccaatttggttctttagatgttttagtaataatgcaggattactcgcgataatt tattaatgcgtatgaagaacaagagtggtgatgtgttattgacacaaacttaaagggtg tatttaactgtatccaaaaagcaacaccacaaatgttaagacaacgtagtgtgtcatca tcaatttatcaagtggttggtggagcagtaggtaattccgggacaagcaaacatgttgcaa caaaagcaggtgttattggtttaactaaatctgcggcgctgaattagcatctcgtggtta tcactgttaaatgcagttgcacctgggtttattgtttctgatatgacagatgctttaagtg atgagcttaaagaacaaatgttgactcaaatccggttagcacgttttggtcaagacacag atatgttaatacagtagcgttcttagcatcagacaaagcaaatatattacaggtcaaa caatccatgtaaatggtggaatgtacatg
118.	MTKSALVGTASRGIGRSIALQLAEEGYNVAVNYAGSKEKAEAVVEEIKAGVSEFAIQAN VADAEDEVKAMIKEVVSQFGLDLVNNAGITRDNLLMRMKEQEWDDVIDTNLKGVFNCIO KATPQMLRQRSGAIINLSSVVGAVGNPGQANYVATKAGVIGLTKSAARELASRGITVNAV APGFIVSDMTDALSDLEKEQMLTQIPLARFGQDQDIANTVAFPLASDKAKYITGQTIHVNG GMYM
119.	atgaaaatttctactaaaggagatattggacttacattgatgatttcttcttgctaaaaaa gaggggcaaggatgtatatcattaaagtcaattgctgaagaaataattgagtgattta tatttagaacagctttaggttcctttaagaaatcggggttaattcgaaggtgacgcggt gctaaaggtggataccaattaagagtgccagcgaagaaatctcagcaggggatattata agactgttagaagggtccaattacatttgggtgaaagttatgaatcagaaccacctgcgcaa aaacaactatggattcgcagtagagagatgcagtgagagatgttttagataatacaacattg aaatatttagcggaatattgtagatatacaagtgaagatttagacggatatacgttttatatt
120.	MLKISTKGRYGLTIMIELAKKHGEGPTSLKSLAQTNLSEHYLEQLVSPLRNAGLVKSIR GAYGGYVLGSEPDATAGDIIRVLEGPISLKCWKMRSLPSVSSGFASGML
121.	gtggcatttgaatttagattaccgatatcggggaaggtatccacgaagggtgaaattgta aaatgggttgttaaagctggagatactattgaagaagacgatgttttagctgaggtacaa aacgataaatcagtagtagaaatcccatcaccagtagtctggtactgtagaagaagttatg gtagaagaaggtacagtagctgttagttggtgacgttattgttaaaatcgatgcacctgat gcagaagatattgcaatttaaaggtcatgatgatgattcatcatctaaagaagaacctgcg aaagaggaagcgcagcagagcaagcacctgtagctactcaaaactgaagaagtagatgaa aacagaactgttaaagcaatgccttcagtagtaaatcgcacgtgaaaaaggtgttaac attaaagcagtttctggatctggtaaaaatggtcgtattacaaaagaagatgtagatgca tacttaaatggtggtgcaccaacagcttcaaatgaatcagctgcttcagctacaagtga gaagtgtgtgaaactcctgcagcacctgcagcagtaacattagaaggcgacttcccagaa acaactgaaaaaatccctgtctatgcgtagagcaattgcgaagaagcaatggttaactctaag catactgcacctcatgtaacattaatggatgaaattgatgttcaagcattatgggatcac cgtaagaatttaaagaatacgcagctgaacaaggtactaagttaacattcttaccttat gttgtaaagcactgtttctgcattgaaaaataccagcacttaacacttcattcaat gaagaagctggtgaaatcggtcataaacattactggaatatcggtattgcagcagacact gatagaggattatttagtacctgtgttaaacaatgctgatcgtaagctcattttccaaatt tcagatgaaattaatgaattagctgttaaagcacgtgatggtaaatcaacagccgatgaa atgaaggtgtcatatgcacaatcagtaatacgtgttcagctggtggacaatggttcact ccagttatcaatcaccagaagtagcaatcttaggaattggccgtattgctcaaaaacct atcgttaaagatggagaaattgttgagcaccagatttagcatatcattaaagctttgac cacagacaaattgatggtgcaactggccaaaatgcaatgaatcacattaaacgtttatta aataatccagaattatttattaatggagggg
122.	MAFEPRLPDIGEGIHGEIVKWFVKAGDTIEDDVLAEVQNDKSVVEIPSPVSGTVEEVM VEEGTVAVVGDVIVKIDAPDAEDMQFKGHHDDSSSKEEPAKEAPAEQAPVATQTEEVDE NRTVKAMPVSRKYAREKGVNIKAVSGSGKNGRITKEDVDAYLNGGAPTASNESASATSE EVAETPAAPAAVTLEGDFPETTEKIPAMRRATKAMVNSKHATPHVTLMDEIDVQALWDH RKKFKEIAAEQGTKLTFLPYVVKALVSALKKYPALNTSFNEEAGEIVHKHYWNIGIAADT DRGLLVPPVVKHADRKSIQISDEINELAVKARDGKLTADEMKGATCTISNIGSAGGQWFT PVINHPEVAILGIGRIAQKPIVKDGEIVAAPVLLALSLSFDHRQIDGATGQNAMNHIKRLI

123.

atgctaaacagagaaaaataaacggcgaataacaaggaaagcagtggtatccaatcgatta
aataaaatctcgattagaaagtacacagtgaggaaacagcatcaatttttagtaggtacaaca
ttaatttttgggtctggggaaccaagaagcaaggctgcagaaagtactaataaagaattg
aacgaagcgacaacttcagcaagtgaataatcgagtgataaagttgatatgcagcaa
ctaaatcaagaagacaatactaaaaatgataatcaaaaagaattggtatcatctcaaggt
aatgaacgacttcaaatgggaataaataatagaaaaagaagtgtaacatctaccact
ggaaataaagttgaagtttcaactgccaaatcagatgagcaagcttcaccaaaatctacg
aatgaagatttaaacactaaacaactataagtaatacaagaagcgttacaacctgatttg
caagaataaatacagtggttaaatgttcaaccaactaatgaggaaacaaaaaggtagat
gccaaaactgaatcaactacattaaatgttaaaagtgtgctatcaagagtaattgatga
actcttgggtgataacaatagtaattcaaatatgaaataatgcagatatcattttgccaa
aaaagtacagcacctaaacggtttgaatacaagaatgcttatagcagcagtcacagccatca
tcaacagaggcttaaaatgttaattgatttaatacacatcaaatacaacatttaactgtcggt
gatgcagataaaaaacaataaaatcgtaaccagcccaagattatttatcattaaaatcacaa
attacagttgtagacaaagttaaatcagggtgattatttcacaattaaatactcagatata
gtacaagtatatggattgtaattccggaagataaaaaatattggtgatataaagatcca
aataatgggtgaacaaattgcgactgcacaaatgatactgcaaaataatttaattacatat
acattttacagattatgttgatcgatttaattctgtacaaatgggaatttaatttaatt
tatattggatcgtacataattctgttagtaaaaaagcagttgagtttaattgttacgata
ggtaattactacaacaaaaaactgctaacattcaatatccagattatgttgtaattgag
aaaaatccaattggatcagcgttcaactgaaacaggtttcacatggtggaataaagaataat
ccagggtactataacaaacgatttatgttaattccatcggaataattcttaacaaatgcc
aaactaaaagttcaagcttaccactcaagttatccataataatcgggcaaaataaataaa
gatgtaacagataaaaaataatcaagttcttaaggttatcacatataaataaaggatac
gatgtgaattactaaagagcttacagatgtaacaaatcaatacttcagaaaaattacatat
ggcgacaacaaatagcgtgttatgtatttggaaatgcagattctgcttatgttgtaattg
gttaattacaaaaatccaataatacaaaatagcgaagcccaacactgttcaaatggctact
ttatcttcaacaggttaataaattccgtttctactggcaatgctttaggatttactaataac
caaagttggcgagctgggtcaagaagtataaaaaattggtaactacgtatgggaagatact
aataaaaaaggtgttcaagaattaggagaaaaagcgttggcaatgtaactgtaactgta
tttgataataatacaaaatcaaaaagtaggagaagcagttactaagaagaatgggtcatac
ttgattccaaacttacctaattggagattaccgtgtagaattttcaaaacttaccaaaaggt
tatgaagtaccccttcaaaacaaggttaataacgaagaattagattcaaacggcttatct
tcagttattacagtttaattggcaagataacttatctgcagacttaggtatttacaacact
aaatacaacttaggtgactatgtctgggaagatacaaaataaaatgggtatccaagacca
gatgaaaaaggtataatctggcgtaacggttaacattaaaagatgaaaacggttaacgttta
aaaacagttacaacagacgctgtatggcaaatataaatttactgatttagataatggtaatt
tataaagttgaatttactacaccagaaggtatacacccgactacagtaacattcggtagc
gacattgaaaaagactctaattggttttaacaacaacaggtgttattaatgggtgctgataac
atgacatttagatagtggtattctacaaaacaccaaataaatttaggttaattatgtatgg
gaagatatacaataaagaatggtaagcaggtatcaactgaaaaaggtatttcaggcgttaaca
gttacattgaaaaatgaaaacggtgaagttttacaacaactaaaacagataaagaatgggt
aaatatcaatttactggattagaaaaatggaacttataaagttgaatttcgaacacacatca
ggttacacaccaacacaagtaggttcaggaactgatgaaggtatagattcaaatggtaca
tcaacaacaggtgtcattaaagataaagataacgatactattgactctggtttctacaaa
ccgacttacaacttaggtgactatgtatgggaagatacaaaataaaaacggtgttcaagat
aaagatgaaaagggcatttcaggtgtaacagttacgtttaaagatgaaaacgacaaagtt
ttaaaaaacagttacaacagatgaaaatggtaaatatcaattcactgatttaaaacattgga
acttataaagttgaatttcgagacacacatcaggttatcaccaacttcagtaacttctgga
aatgatactgaaaaagatttcaatgggttttaacaacaacaggtgtcattaaagatgcagat
aacatgacattagacagtggtttctataaaacaccaaataatagtttaggtgattatggt
tggtacgacagtaataaagacggcaacaagattcaactgaaaaaggtatcaagaatggt
aaagttactttatataatgaaaaagggcaagtaattggaaacactaaaacagatgaaaaat
ggtaaatactgctttgataatttagatagcgttaatacaaaagttatttttggaaaagcct
gctggcttaacacaaacaggtacaaatacaactgaagatgataaagatgcagatgggtggc
gaagttgacgtaacaattacggatcatgatgatttcacacttgataatggctactacgaa
gaagaacatcagatagcgactcagattccggacagcgactcagattcagacagagactca
gactcagatagtgattcagactcggatagcgattcagattcagacagcgattcagattca
gatagcgattcagattcagacagagactcagatagtgattcagactcagatagcgactca
gattcagacagcgactcagattcagacagcgactcagactcagatagtgattcagactca
gatagcgactcagattcagacagcgactcagactcagacagcgactcagactcagatag
gactcagattcagatagcgactcagattcggacagcgattcagactcagatagcgactca
gattcagatagcgattcggactcagatagcgactcagattcagatagtgattcagactca
gatagcgactcagattcagacagcgactcagattcggatagcgactcagattcagacagc
gactcagactcggatagtgattcagactcagatagcgactcagactcagatagcgattca
gattcagatagcgactcagactcagacagcgattcagactcagacagcgactcagactca
gatgcaggttaagcacacacctgttaaaccaatgagtactactaaagacacacataaaa
gcaaaagcattaccagaaacaggttaataaataagcggctcaaaataacgcaacggttattt
ggcggattatttcgcagcatttaggatcattatgttatcggctcgtcgttaaaaaacaaaat
aaa

[illegible]

126.	MAGQVVQYGRHRKRNYARI SEVLELPNLEIQTKSYEWFLREGLIEMFRDISPIEDFTG NLSLEFVYRLEGPKYDLEESKNRDATYAAPLRVKVRLIIKETGEVKEQEVFMGDFPLMT DTGTGTVINQABRVISQVLRSPSVYFNEKIDKNGRENYDATTIPNRGAWEYETDAKDVV YVRIDTRKRLPLTVLLRALGFSDDQEIVDLLGDNEYLRNTLEKDGTEQALLLEIYBRL RPGBPPTVENAKSLYSRFFDPKRYDLASVGRYKTNKKLHLKRLFNQKLAEPVINTETG EIVVEEGTVLDRKIDEIMDVLESNANSEVFLHGSVIDEPEIQSIKVYVPNDDECRIT TVIGNAFDPSEVKCITPADIIASMSYFFNLLSGIGYTDIDHGNRRRLRSVGEELLQNPFR IGLSRMERVVRERMSIQDTESITPQQLINIRPVIASIKEFFGSSQLSQFMDQANPLAELT HKRRLSALGPGGLTRERAQMEVRDVHYSHYGRMCPIETPEGNIGLINSLSYARVNEFG FIETPYRKVDLTHAITDQIDYLTAEDESVVVAQANSKLDENGFRMDDEVVCRFRGNNT VMAKEMDYMVSQKQVSAATACIPFLENDSDNRALMQANMQRAVPLMNPEAPFVGTG MEHVAARDSGAAITAKHGRVVEHVESNEILVRRVVEENGVEHEGELDRYPLAKFKRSNSG TCYNQRPIVAVGDVVEYNEILADGPSMELGEMALGRNVVGFMTWDGYNVEDAVIMSERL VKDDVTYTSIHIEYESRRQRDITKLGPETTRDIPNVSESALKNLDDRGIVYIGAEDKGD ILVGKVTGKVTETAEERLLHAIFGEKAREVRDTSRVRPHGAGGIVLDVKVFNREBEGDD TLSPGVNQLVRYVYVQKRKHVGDKMGCRHGNKGVISKIVPEEDMPYLPDGRPIDIMLNP LGVPSRMNIGQVLELHGMAAKNLGIHVASPVFDGANDDDVWSTIEEAGMARCKTFLYD GRTGEPFNRISVGVYMLKLAMVDDKLHARSTGPYSLVTQQLPGGKAQFGGQRFGE VWALEAGAAATLQELITKSDDTVGRVKTYEAVKGENISRPSVPESFRVLMKELQSLG LDVKVMEQDNEIEMTDVDDDDVVERKVDLQONDAPEQKSY
127.	atgcttagggcctacgcatctatctatcgctatttattcagtaataataactggaaggagaaa aaatacagctggctagagaattttcattagaaaaaactcgtaataatcggtatcaggtccac atgtatgctggtaaaacgactacgactgaacgtattctttattacactggcggtatccac aaaattggtgaaacacacgaaggtgcttcacaaatggactggatggagcaagaacaagac cgtggtattactatcacatctgctgcaacacagcagcttgggaaggtcaccgtgtaaac attatcgatacacctggacacgtagacttactgtagaagttgaacgttactacgtgta cttgacggagcaggttactgacttctgacacaaatcaggtgttgaacctcaactgaaca gcttggcgctcaggttacaacttattggtgttccacgtatcgatttgaatacaaaatggac aaattagggtgtaacttcgaatactctgtaagtaacttactatgatcggttacaagctaac gctgctccaatccaattaccaatgtgtgcggaagacgaattcgaagcaatcattgactta gttgaattgaaatgttccaataatacaaatgatttaggtactgaaattgaagaattgaa attcctgaagaccacttagatagagctgaagaagctcgtgctagcttaatcgaagcagtt gcagaacttagcgagcaattaattggaataatcttggtagcgaagaattttagtttct gaattaaagaagctatccgccaagctactactaacgtagaattctaccagctattgt ggtagcagcttcaaaaacaaaggtgttcaattatgcttgacgctgtaattgattactta ccttcacactagacgttaaaccaattattggtcaccgtgctagcaacccgaagaagaa gtaattcgggaagcagacgattacagctgaattcgtgctgattagcgttcaaggttatgact gacccttattgtgtaaatatacattcttccgtgtgattcaggtacaaatgacatcgtgt tcatacgttaagaacttcactaaaggttaaacgtgaacgtgttaggtcgtttattacaatg cacgctaactcagctcaagaataatcgatactgtatactctggagatactcgtgctgctgta ggcttaagaatcacaggtactggtgatactttattggtgagaaaaatgacattatcttg gaatcaatggaattccagagccaggttattcacttactagtagagccaaaatctaaagct gaccaagataaaaatgactcaagctttagtttaattacaagaagaagaccacacattccat gcacacactgacgaagaactggacaagttatcactcgtggtgattggtgagcttactta gacattcttagtagacgctatgaagaagaattcaacgttgaatgtaacgtaggtgctcca atggtttcattatcgtgaaacattcaaatcactcgtgcacaggtcaaggttaattctctcgt caatctggtggtgctggttcaatcaggtgatgttccattgaattcacaccaaacgaaaca ggcgaggtttcgaattcgaacacgctatcgttgggtggtgatttccctggtgaatacatt ccatcagtagaagctggtcttaagatgctatggaataatggtgttttagcaggttatcct tcaattgattgtaagctaaattatgatggttcataccatgatgctgattcattcgtgaa atggccttcaaaaatgctgcatcatttagcacttaagaagctgctaaaaaattggtatcct gtaattcttagaaccatgatgaagaataacttgaattgctgaagagtagatgggtggtat atcattgggtgacgttaacatctcgtcgtggagctgttggatggtatggaacctcgtgtaat gcacaagttgttaattgcttattgaccactttcagaataatgctggttatgcaacatcatta cgttcaaacactcaaggtcgcggtacttaccatgtagcttgcagactgctgaggtggt ccaaaatcaatcgtggaagattattcaagaaaaataaagggtgaa
128.	MAREFSLEKTRNIGIMAHIDAGKTTTTERILYYTGRIHKGITHEGASQMDWMEQEQDRG ITITSAATTAANWEGHRVNIIDTPGHVDFTVEVERSLRVLGDGAVTVLDAQSGVEPQETVW RQATTYGVPRIVFVNMKDKLGANFEYSVSTLHDLRQANAAPILQPIGADEFEFAIIDLVE MKCFYTNLDGTEIEIEIPEHLDRAEEARASLIEAVAETSDELMEKYLGDDEISVSEL KEAIRQATTNVEFFYPVLGCTAFKNGKVQLMLDAVIDYLPSPLDVKPIIGHRASNPREEVI AKADDSABFAALAFKVMTPYVGLKTFPRVYSGTMTSGSYVKNSTKCKRERVGRLLQMH NSRQEIDTVYSGDIAAAGVGLKDTGTGDTLCEKNDIILESMFPEPVHLSVEPKSKADQ DKMTQALVQLQEDPTFHAHTDEETGQVYIGGMGBLHLDILVDRMKKEFNVECNVGPV SYRETFKSSAQVQKFSRQSGGRGQYGDVHIEFTPNETGAGFEFENAIIVGGVVPREYIPS VEAGLKDAMENGVLAGYPLIDVKAKLYDGSYHVDVDSSEMAFKIAASLALKBAKKCDPVI LEFPMKVFTIEMPEEYMGDIMGDVTSSRRGRVDGMEPRGNAQVNVAYVPLEMFGYATSLRS NTQGRGTYTMYFDHYAEVPKSIAEDIKKQKGE
129.	atgactaaaaaagtagcaattattctagcaaacgaatttgaagatagaaatttcaagc cctaagaggcatttagagaatgcaggcttataactgtagtgattggagatactgcaaat agtgaagttgttggttaaacacgggtgaaaaagttactgtcgatgtaggcattgcagaagct aaaccagaagattatgatgcattataattcctggaggattttaccagatcatttacgt ggagatacagaaggtcgatagggcacatttgctaaaacttactaaaaatgatgtacca acatttgccatttgcattgggcccacaaatactaatagatacagacgattttaaaggctg acgttaacagcagatttaaatgtacgcaagatttatcaaatgcaggcgcaatgtaggt gatgagtcagtagtttagacaacaattattgtaacaagtcaggtaccagacgatttagat gattttaaactcgagaatcggttaaaccaattacaa
130.	MTKKVAIILANEFEDIEYSSPKEALENAGFNTVVGDTANSEVVGKHGEKVTVDVGIAEA KPEDYDALIPGGFSPDHLRGDTGEGRYGTFAKYFTKNDVPTFAICHGPQILIDTDDLKGR TLTAVLNVRKDLNAGAHVDESVDNNIVTSRVPPDDLDFFNREIVKQLQ
131.	atggctaatacatgaacaaatcattgaagcgattaaagaatgtcagtagtagaattaaac gacttagtaaaagcaattgaagaagaatttgggtgaactgcagctgctccagtagcagta gcaggtgcagctgggtggcgctgacgtgcagcagaaaaaactgaatttgagcttgagtt acttcagctgggttcattcaaaaataaagttgtttaaagctgttaaagaagcaactgggtta gatttaaagaatgctaaagaatttagtagacggagctcctaaagtaatacaagaagctt cctaaagaagaagctgaaaaacttaaagaacaattagaagaagttggagctactgtagaa ttaaaa
132.	MANHEQIIIEAIKEMSVLELNDLVKATIEEFVGTAAAPVAVAGAAGGADAAAEKTEFDVEL TSAGSSKIKVVKAVKEATGLGLKDAKELVDGAPKVIKEALPKEEAELKEQLEEVGATVE LK

139.	gtgggtccaagaatatgatgtaactggttataggtgctgggacatgcaggtgtagaagcaggt ttagcatctgcaagacgtggtgctaaaacattaatgctaacaataaatttagataaatatt gcatttatgcatgtaacccatctgtaggtggaccagctaagggtatcggtggtcggtgaa atgtgtagctttaggtggacaaatggcaaaaacaatcgataaaacacacattcaaatgaga atggttaaatcacaggttaaggacacctgctgtaagagcactaagagcgcaagcagataaagta ctttatcaacaagaaatgaaacgcgtgattgaagatgaagaaaatttgcatataatgcaa ggtagtggtagacgaacttattatagaagataatgaagttaaaggtgtacgtacaaatatt ggtagacagattatttctaaagcagtaattattacaacgggaacattttttagcgtggtgaa atcatttttaggtaatatgaagtattcaagtggaccaaatcaccattaccatcaatcaca ttatcagacaatttaagagaacttggttttgatattgttcgttttaaaacaggttacacca ccgctgtgtaaatcaaaaacaattgactattcgaagactgaaatacaaccaggtgacgat gtaggttcgtgcatctcagctttgaaacaacagataatatttagatcaattgccaatgttgg ctaactataactaatgctgaaacacacaaagtattcgatgataatttcatctatctgca atgtattcagggatgattaaaggaaccgggccagcttattgcccttcaattgaagataaaa ttgttcgatttaatgataagccgcgacatcaacttttcttagagcctgaaggtcgtaaat acaaatgaagtatatgtgcaaggattgtctacaagcttctcctgaacatgtgcaacgtcaa atggttagagacgataaccaggtcttgaaaagcagataatgatgctgcccgttacgcaatt gaatatgatgcatgtgtgccaacgcagttatggcctacacttgaacgaaaatgatataaa aaccttatatactgcaggtcaaattaattggtacatctgggtatgaagaagcagcaggacaa ggattgatggcaggtattaaacgtcgaggttaaggtgttaaacacagcggaagaagataata agtcgttcagatgcataatttgggtgtcttaacgatgatcttgaactaaagggtactaat gaaccttatcggttactaacatcacgtgcagataatcggtttggtactacgtcatgataat gctgattttagatgacggatattgggatagaacttgggtatgatttctgaagaagatat gcacggttttaagtaaaaacgtcagcaaatgtatgcggaattaaagcgtttatcagatat cgtataaaacaaacgaacatcacgcaagcgattattgaacaacatgggtggttctcgctta aaagatgggtatttttagctatcgatttattacgcagacgtgaagtactacgataataat ttagaacttttagaagaagaacatcaattgaatgcagatgttgaagaacaagtagaataa caacaaaatatgaaggttatatacaataaatcactacaacaagttgagaaggttaagcgt atggaagagaagaataatccagaagacttagattatagtaagattgatagtttggcgact gaagcgcgagaaaaatattcagaagtaaaacctttaaatttgcacaagctctagaata tcaggggtataatccagcagacatatctattattgatttacttagaacaaggttaaacct caaaggggtgagtgac
140.	MVQEYDVIVIGAGHAGVEAGLASARRGAKTLM/LTINLDNIAFMPCNPSVGGPAKGIVVRE IDALGGQMAKTIDKTHIQMRMLNTGKGPVAVRALRAQADKVLVYQQEMKRVIEDEENLHIMQ GMVDBELIEDNEVGKVRTNIGTEYLSKAVIITTCFTFLRGEIILGNMKYSSGPNHQLPSIT LSDNLRGLGPDIVRFKGTGTPPRVNSKTIIDYSKTBIOQGGDDVGRFASFETTEVILDQLPCW LTYTNAETHKVIDNHLHSAMYSGMIKGTGPRYCFSEIDKFVRFNDRKPRHQLFLEPEGRN TNEVYVQGLSTSLPEHVQRQMLETIPGLEKADMMRAGVAIEYDAIVPTQLWPTLETMKIK NLVTAGQINGTSGYEEAAGQGLMAGINAAGKVLNTGEKILSRSDAYIGVLIDDLVTKGTN EPYRLT/SRAEYRLLLRHDNADLR/LTDMGYELGMISEERYARFNEKROQIDAEIKRLSDI RIKPNETHQAIIEQHGGSR/LKDGILADLLRRPEMTYDIILELLEEHLNADVEEQVEI QTKYEGYINKSLQVQEVKVRMEKKIPEDLDYSKIDSLATEAREKLSVFKPLNIAQASRI SGVNPADISILLIYLEQGLQRVSD
141.	LMINEREVFILIYLDNAAXTKAFEEVLDTYLKVNQSMYYPNPSPHKAGLQANQLLQOAKT QINAMINSKTYNDVVFVTSGATESNNLALKGIA/YRKFDTAKEIITSVLEHPSVLEVVRYLE AHEGFKVKYVDVKKDGSINLEHFKELMSDKVGLVTCMYVNNVTGQIQPIQMAKVIKNYP KAHFHVDVAVQAFGKISMDLNNIDISISLGHKFNGLKGQGVLLVNHQI/VNVEPTVHGGGQY GVRSGTVNL/PNDIANVKAMKIANENFEALNAFVTELNDVROFLNKYHGVYINSSTSGSP FVLNISPPGVRGEVLVNAFSKYDIMI/STTSACSSKRKNLNEVLAAMGLSDKSI/EGSIRLS FGATTTKEDIARFKEIFIIIEEIKELLK
142.	MNKQOKFKSFYSIRKSSLGVASVAISTLLLLMSNGEAQAAABETGGTNT/EAQPKTEAVA SPPTTSEKAPETKPVANAVSVSNKEVEAPTSETKEA/EVKEVKAPKETKEVKPAKATNN TYPILNQELREAIK/PAIKDKHSAPNSRPIDFENKKDGTQQFYHYASSVKPARVIFTD SKPEIELGLQSGQFWRKFEVYEGDKLPIKLVSYD/VKDYAYIRFSVSNQTKAVKIVSST HFNNKEEKYDYTLMEFAQPIYN/SADKFKTEEDYKAEKLLAPYKAKTLERQVVELNKIQD KLPEK/LKAEYKKLEEDTKKALDEQVKS/AITEFQNVQPTNEKMTDLQDTKYVYVESVENE SMMDTFVKHPIKTGMLNGKKYVMET/TNDDYWKDFMVEGQVRVTISKDAKNNRTTIFPY VEGKTLYDAIVKVHVKTIDYDQYHVRIVDK/EAFTKANTDKSNKKEQQDNSAKKEATPAT PSKPT/PSFVEKESQKQDSQKDDNKQLPSVEKEND/ASSESGKVTLATKPTKGEVSSSTT PTKVYSTTQNVAKPTTGSKTTKDVVQTSAGSSEAKDSAPLQKANI/KHTNDGHTQSQNNK NTQENKAKSLPQTGEESNRDMTLP/LMALLALSSIVAFVLPKRKN

143.

atgagctgggttataaattattcggcgaagataatgattcaaatgatgacttgattcat
agaaagaaaaagacgtcaagaatcacaataatagataacgatcatgactcattactg
cctcaaaaataatgatatattatagtcgtccgaggggaaatccggttttctatgagcgtg
gcttatgaaaaatgaaatgttgacaatctgcagataactattccagatgaaaaagacaa
taccatcgagactatcgcaacaaagccagcgttctcgttcacaaaaacgacatcgccgt
agaagaaatcaaaacactgaagaacaaatatagtgaacacgtgggaattctaaaaa
tcacagcaagataaaaaataaagatcattcacattaccatcgaataagccaggtaca
tatgtttctgcaattaatggtatttgagaaggaaacgcacaaagccaaaaacacataatg
tattctaataatcaaatcatcgtgctaaagattcaactccagattatcacaagaaggt
ttcaagacttcagaggtaccgtcagctattttggcacaatgaaacctaaaaagttagaa
aatggtcgtatccctgtaagttaaacttcagaaaaagttgagtcagataaaacaaaat
gataaataatgtagtaagacgcaaacgtctcaaaaataacaattagaacaaagaaaaa
aatgtagtagttgttcaacaaggaactgcatctaaatcatctgatgaaaatgtatcatca
acaacaaaaatcaatgccttaattatcaaaaagttgataaactatcaaaaatgaaaaat
tatgtcttcacaaatgttgagaataatagacgtgaacgagaacgtgaaagtgttcaaaag
cgtcgtattcaaaaagcgttgcaacaaagcgtgaagaacataaaaacgaagacgaagat
gcaatcacacgtgcaattgatgaaatgtatgtaaacgaagcgaacgtatgttggtgat
agttcattaaatgatgatagtgacttaacagataatagtacagatgcttagtcagcttcat
acaaatggcatagagaatgaaactgtatcaaatgatgaaaataaacaagcgtcaatacaa
aatgaagacactaatgacactcatgtagatgaaagtcacatacaattatgaggaggttagt
ttgaatcaagtatcgacaacaaaaacaaatgtgcagatgatgaagtacgggtttcgaatgta
acgtctcaacatcaatcagcactacaacataacgttgaagttaaatgataaagatgaacta
aaaaatcaatccagattaatgtcgtatcagaagaagatggagcaacgaataaagaagaa
tattcaggaagtcaaatcgatgatgcagaattttatgaattaaatgatcacagaagtagat
gaggatcactactcaaatatcgaagataataccaatagaacgcgtctgaaatgcatgta
gacgctcctaaaaacgcaagagtacgcagtaactgaaatcgaagtaaatatogataaa
acggttgataaatgaaatggaattagcacccgctcataaaaaagatgaccaaacaaactta
agtgctcaactcattgaaaaagaaatgatgtgaatgataatcatgtgttggaagattcaagc
atgaaatgaaaatagaaaaagaaataacgcagaaattacagaaatgtgcaaacgaagcagct
gaaagtgaacaaaaatgtcgaagagaaaaactattgaaaacgttaattcaaaagaaacagact
gaaaaggtttcaactttaagtaaaagaccatttaattgtgtcargacgccactctgataaa
aagcgtatgatggatcgtaaaaagcattcaaaagtcattgtgctgaaatgaaagcgtgta
caaagttaagcaagcgtgtgagtgaaagaatgcctgcgagtcagccacaccatcatcaaga
tctgattcacaaagagtcacaaatcaaaatgcataaaaaacaaataatgacatacaacaaat
gttgagaacaaatcaacttattggtcatgcagaaacagaaatgattatcaaaatgcacaa
caataatcagagcagaaaccttctgttgattcaactcaaacggaatatttgaaagaagt
caagtataatcaattggaataatgagcaagttgatcaatcaacttcgtctcagtttca
gaagttaagcgacataactgaagaagcgaagaaacacacatccaacaatactagtgga
caacaagataatgatgatcaacaaaaagatttacagtcacattttcaaataaaaatgaa
gatacagctaatgaaaatagacctcggacgaacaaacaaatgttgcaacaaatcaagct
gtacaaacatctaagcagatgattcgttaagggcccaaatattaattgccaagtgttca
ttactagaagaaccacaagttattgagtcggacgaggaactggattacagataaaaagaaa
gaactgaatgacgcattatttacttttaattgtactcgcagaagtacaagatgtaactgaa
ggtccaagtgttacaagatttgaattatcagttgaaaaaggtgttaagtttcaagaatt
acggcattacaagatgacattaaaaatggcattggcagcgaagataattcgtatagaagc
cctattccaggaactagtcgtgttggtattgaaagttccgaacaaaaatccaacgacagtc
aacttaccgttctatttgaattctcaagttttaaataatgctgaattcaaattaacagtt
gcgatgggttatagaatttaataatgaaccattacttatggatattgctaaaacgccacac
gcactaatgacaggtgcaactggatcagggaaatcagtttgatcaatagttatttgatg
tctttactatataaaaatcatcctgaggaattaaagatttacttatcgatccaaaaatg
gttgaattagctccttataatgggtttgccacatttagttgcacgggtaattacagatgct
aaagcagctacacagagtttaaaaatgggcccgtagaagaaatggaacgacgttataagtt
tttgcacattaccatgtacgtaataataacagcatttaacaaaaagcaccatagatgaa
agaatgccaaaaatgtcatttgaattgatgagttggctgatttaattgatgatggctccg
caagaagttgaacagtcatttgcagaattgctcaaaaagcgaagacatgtggtattcat
atgttagtagctacgcaaaagaccatctgtcaatgtaattacaggtttaattaaagccaac
ataccaacaagaattgcatttatggtatcatcaagtgtagattcgagaacgatattagac
agtggtggagcagaacgcttggtaggatggcgatgtgtatattcttgtagcgggtatg
aataaacagattagagttcaaggtacatttgtttctgatgacgaaatgtatgattgtgt
gattttatcaaaaacaaagagaacccgactatctatttgaagaaaaagaaatgttgaaa
aaaacacaaacacaaatcacaagatgaattatttgatgatgtttgtgcatttatggtta
gaaggacataattcaacatcatttaatacaagacatttccaaatggctataatagagca
gcaagaattatcgatcaattagagcaactcgggttatgtttcgagtgcaattggttcaaaa
ccaagggtatgtttacggaagcagatttaataaagaa

144. atgcctaaacgtaatgatatacaaaacaatttttagtaatagggctgggccaattatcata
gggtcaagcagctgaatttgattatgctggaacacaaagcatgtctagctttaaagaagag
ggatatcgagttattcttgaattcaaatccagcgacaatcatgactgataaggaatt
gggataaaagtatatatgaaccgttaactcatgattttatagcggaattatacgtaaa
gagcaacctgacgctttacttccaactttagggtggtcaaacagggtttaaacaatggcgatt
caactacacgaagtggtgtgcttcaagataataacgtcccaattattaggaactgagcta
acatcaattcaacaagcagaagaccgtgaaatgtttagaacattaatgaatgatttaaac
gttccgtgtaccagagagtgacattgttaaatcacgtagagcaagcctttaaatcaaaagag
caagtgggataccccgctaattgttagaccggcatttacgatgggtgggtaccggaggcggt
attgtgcataatgatgaagaattacatgaaatcgctcaaatgggtcttctattatagcca
gcaacgcaatgtttattagaaaaatctatcgaggttttaaagaaatcgaatcacgaagta
atgctgataaaaaacgataatgccatcggtgtatgtaaacatggaaaaatattgatccagtt
gggtattcatacaggcgattcaattgtgtggtccttagtcaaacattatcagatgttgag
tatcaaatgtttacgtgatgtttcatataaagtatttcgagctttagggtatcgagggtgt
tgtaattgttcaattagcatttagatccccattcattcgattattatattagaagtaaat
ccgctgttatcagcttcatcagcggttagcttcaaaagcaacaggatatcctattgcaaaa
ttagctgtcaaaaatcgcggttggtctaacattagatgaaatgttaaatccaattacagga
acatcttatcgagcggtttgaaccaacttttagactatgtgatttcaaaaataccaagattt
ccttttctataaatttgaaaaaggagacgagagcttggcacacaaatgaaagcaaacaggt
gaagttatggccattgttcgaacttacgaagaatcattgttaaaagcaattcgatcactt
gagtatggtgtgcatcacttaggattaccaaatgggtgaagcttcgatcttgattatatt
aaagaacgtatttcacaccaagatgatgaacgattatttttcatcggaagcaattaga
agaggcacaacattagaagaattcataatagactcagatttgattacttcttcttacac
aagttccaaaacattattgatattgagcatcaattaaaagacatcaagggtgatttagaa
tatcttaaatatgcaaaagattatggatttagtgataaaacaatagcgcatcgctttaat
atgacggaagaagaagtatatcaattgcgtatggaaatgatataaacctgtttacaag
atggttgatacttgcgagctgaatttgaatcttcaacacattattattatggtacatac
gaaactgaaaatgaattccatagttactgacaaaagaaaaatcttagtattaggtcttgga
ccaattcgaatcgcccaagggtgtagaatttgactatgcgacagttcatgcccgtttgggca
attcaaaaagcagggtacgaagcgataattgtgaataacaatccagaaaacagtttcaaca
gacttctcaatttctgacaaaattatactttgaacctttaactgaagaagatgtgatgaat
atcattaatttgaaaaaacctaaagggtgtcgttgtacaatttgaggagcaaacacagcgatt
aatttagcagacaaattggctaaacatgggtttaaataacttggtacttcactagaaaaat
ctaaatcgtgctgaagatagaaaagaatttgaagcactattagaaaaaatcaacgtgcca
cagccacaagggaacacagctacatcacctgagggaagcattagcgaatgctgcagaatc
ggatatccgggttagtagtaagaccttcttatgtattaggtgggtcgcgcaatggaaattgta
gacaatgcaaaagagttagaaaacttatatgaccagggtgtaaaagcgagtcgggaacat
ccggtactagtcgatagataatttaactggtaagaatgaagttgatgagatttgat
ggagaacgggtcattattccaggaatcatggaacatttgaacgtgctgggtgcatagtt
gggtgactcaatcgctgtatattccaccacaaacttgacagaagacgagttagcaacactt
gaggactatactataaaaattagctaaaagggtttaaactcattggcttaatacaacttcaa
ttcgttatagctcagcatggtgtgtatgttttagaagtaaatccacgttcttagtagaacg
gtaccattcttaagtataaaattactgatattccaatggcacaatttagctatgaggaatc
attggggaaaaactaacagatatgggttatcaagaagggttcaaccatatgctgagggt
gtctttgtgaagcaccagttatttagtttaataaaattgaaaaatgttgatattacttta
ggacctgaatgaagtcaacaggtgaagtgatggggaaagatactacattagaaaaaggcg
ttattcaaaagggttaacaggttagtgccgtgaagttaaagatcacggtacagttatattg
accgtcagtgacaaaagataaagaggaagttgttaaatgggcacaacgcttaaatgaagtt
ggctataaaattttagcaacgtctggaacagctataaaattagctgagtagacatacct
gcagaagtagtagggcaaaattgggtggcgaatgatatttaaacagctattcaaatgggt
gatgttcaaatcggtataaaatcaaatgactaaaggtaagaagtagaaagggatgggttc
caaattagacgtactacagttgaaatgggtattccatgtttgacattcttagatacagct
aatgcttaacgaatgtaattgaaagtagacatttacaattgcgtcaaatg

145.	<p>atgattaaacagggaataaaaaaggcaataacaaaaagggtatgatttcaaatcgctta aacaatttttcgattagaaagtatactgtagggaactgcacgatttttagtaggtacgaca ttgatttttggcttagggaaacgaagaagctaaagctgctgaaacactagtacagaaaaat gcaaaacagatgatgcaacgactagtataaagaagtagtgcggaaactgaaaat aattcgacaaacagaaaaataattcaacaaatccaattgaagaagaacaaatactgattca caaccagaagctaaaaaagaatacaacttcatcaagtactcaaaaacagcaaaaatacgtt acagctacaactgaaactaagcctcaaaacattgaaaaagaaaatggttaaccttcaact gataaaactgacagagaagatacatctgttatttttagaagagaagaagcaccacaaataat acaaaataacgatgtaactacaaaaccatctacaagtgaacatctacaagtgaattcaa acaaaaccaactacacctcaagaattctacaaatattgaaaattcacaaccgcaaccaacg ccttcaaaagttagacaatcaagttacagatgcaactaatccaaaagaaccagtaaatgtg tcaaaagaagaacttaaaaaaaatcctgagaaaattaaaagaattgggttagaattgatagc aatacagatcattcaactaaaccagttgctacagctccaacaagttgtgcacacaaacgt gtaaacgcgaataatgcgcttttgagttgcaacaccagcagcagttgcttcaacaatgta aatgatttaattaaagtgcgaagcaacaatacaagttggcgatggtaagataatgtg gcagcagcgatgacggtaagataattgaatatgatacagagtttacaattgacaataaa gtcaaaaaaggcgatacaatgacgatttaattatgataagaatgtaattccttcggattta acagataaaaaatgatcctatcgatattactgatccatcaggagaggtcattgtcaaggga acatttggataaagcaactaagcaaatcacatatacatttacagactatgtagataaatat gaagataaaaaatcacgcttaactctatattcgtatattgataaaaaacagttccaaat gagacaagtttgaaatttaacatttgctacagcaggttaagaacaaagcgaataatgtcact gttgattatcaagatccaatgggtccatgggtattcaaacattcaatctatctttacaaaa ttagatgaagataagcaaaactattgaacaacaaatttatgttaaccattgaaaaaatca gcaaccaacacataaagttagatagctggtagtcaagtagatgatttggaataattaaa ctaggaaatggtagaccattattgacaaaaatcacagaataaagggtttataaagttaac tctgatcaacaattgctcctcaagtaataagaatctatgatttttagtcaatcacgaagtga acaagtcaatttgataataaaaaatcatttagtaataatgtagcaacattggattttgggt gatatttaattcagcctatattatcaaaagtgttagtaataatcacacctacatcagatggc gaactagatatttgcccaaggtactagtagtagagaacaaactgataaataatgggtattataat tatgcaggatattcaaaacttcatcgtaacttctaatacactggcgggtggcgacggtact gttaaacctggaagaaaagttatacaaaatgggtgactatgtatgggaagacgttgataaa gacgggtgttcaagggtacagattcaaaaagaaaaacaaatggcgaacgttttagttacatta acttaccggcgaggtactacaaaaatcagtaagaacagatgctaagtggtcattatgaattc gggtgggttgaaagacgggagaaactatacagtttaattcgaaacgcaactggatattctt ccaacaaaagttaattggaacaaactgatgggtgaaaagactcaaatggtagttcggttact gttaaaatttaagtgaaagatgatattgtcttttagatactgggtttttacaagaacataaa tacaacttaggtgactatgtatgggaagatactataaagatgggtatccaagatgcaaat gagcagggaatcaagatgttaagggttacattaaagatagtagtggaaggttatgtgt acaactactactgatgcctcgggttaaatataaatttacagatttagataatggtaactat acagtagaatttgaaacaccagcaggttacacggcaacgggttaaaaaatactacagctgat gataaagatttctaattgggttaacaacacacaggtgtcattaaagatgcagataatagaca ttagacaggggtttctataaaacacccaaatacagtttaggtgattatgtttggtagcagac agtaataaagacggcgcaaacagattcaactgaaaaaggtatcaaaagatgtgacagttaca ttgcaaaaacgaaaaaggcgaagttaattggaacaaactaaacagatgaaaaatggtaaatat cgtttcgataatttagatagcgggttaatacaaaagttaattttgaaaagcctgctggctta acacaaacaggttacaaatacaactgaagatgataaagatgcagatgggtggcgaagtgcac gttaacaaattacggatcatgatgattttcacacttgataacggatcttcgaagaagataca tcagacagcgatttcagactcagatagtgactcagacagcgactcagactcagacagcgac tcagactcagacaggtgattcagattcagacagcgactcagattcagatagcgactcagat tcggacagcgatttcagactcagatagcgactcagattcagatagcgattcagactcagac agcgactcagattcagatagcgatttcggactcagacagcgatttcagactcagatagcgac tcagactcagacagcgactcagattcagatagcgatttcggactcagatagcgactcagat tcagacagcgatttcagactcagatagcgactcagattcagacagcgatttcagactcagat agcgactcagactcagacaggtgattcagattcagacagcgactcagactcagatagcgac tcagatttcggacagcgactcagactcagatagcgactcagactcagacaggtgatttcagac agcgatttcagactcggatgcaggaacacatacactgttaaaacaaatgagtactactaaa gacacatacaataaagcaaaagcattaccagaacacaggttagtgaataaacggctcaaat aacgcaacgttatttgggtgattattttgcagcattaggttcattattgttattcggctcgt cgcaaaaaacaaacaaa</p>
146.	<p>atgactcatttatttagagacatttgagatgtcaatagatcaccaggaagatgggttagtt gttatttctatgcctgttactgataaagtaaaacacacatttggatatttacatgggtggg gcttcgatttgccttaggtgaaacagcatgttcatttaggattcgtcaatttaattgataca accaaatttaattccattaggttttagagatgaatgctaaccataattcattctgctaagat ggctcgtgttactgcgacagctgaaattatctcagaggttaagtcgacacatgtatgggt ataaaaaatgaatgacaagaacaatttaattacagttatgcgtggttagcaggttgcatt aaaccttttaaaa</p>
147.	<p>atggagcatacaactatgaaaaataacaacgatttgctaaaaaagtttagcactaggcctt ttaacacacaggtgtaatacacaacgacaacgcaagcagcaaacgcgacaacacacattctcc actaaagtgggaagcaccacaatacaacacgccttcaactaaaaatagaagcaccgcaatca aaaccaaagcgacaacacacgccttcaactaaagttagaagcaccgcaacaaacagcaaat gcgacaacacgccttcaactaaagttagaacaacacctccatcaacaacacgcgcacaacaa atgcaatctactaaattcagacacacacaaatcgccaacacacaaacagttaccaacagaa ataaatcctaaatttaagatttaagagcgtatttatcgaaaccaagtttagaatttaaa aatgagattgggtattattttaaaaaaatggacgacaataagatttatgaattgtgtccca gattatttcatatataaaaattgcttttagttggtaagatgataaaaaatattggtgaagga gtacataggaattgtcgatgattttgtcgttttagaagaaaaataatcaaatctggaaaaa tattctgtcgggtgtatcacaaagagtaattagtaaaaaagttgatcacaaagcaggagta agaattactaaggaagataataaagggtacaactctctcatgattgttcagaattcaagatt actaaagaacagatttccttgaaagaaacttgattttaatttgagaacaaactatttgaa aaaaataactctgtaacggttaacggttaacggttaacggttaacggttaacggttaacggt ggaaagtacacggttgaaattgcacaaaaaattacaagaaaaatcgcatggcagatgtcatt aatagtgaaacaaattaaaaacatcgaagtgaatttgaaa</p>

148.	atgaaaaagcaataatttcgctaggcgcatagcagttgcatctagcttatttacatgg gataacaaagcagatgcatagtaacaaaggattatagtggaagaaacacaagttatgct gggagtaaaaatgggacattatagatagcagatatttaaattcagctctatattttg gaagactatataaattatgctataggattaaactataaataatgaatatggagataatatt tataaagaagctaaagataggttggtaaaaggattaaaggaagatcaatatcttttg gagagaagaatactcaatatgaagattataaacaattggtagcaaatataaaaaagaa aatcctcgtagcagatttaaaaaatggctaattttcataaataaatttagaagaactttcg atgaagaataacaatgaactacaggtgcatataagagagcactggatgattttcacaga gaagttaagataattaaggataagaattcagacttgaaaacttttaatgcagcagaagaa gataaagcaactaaggaagtatacgatctcgatctgaaattgatacattagttgtatca tattatggtgataaggattatggggagcagcgaaagagttacagagcaaaactggactta atccttgagagatacagacaatccacataaaattacaattgaacgtattaaaaaagaaatg atgatgacttaaaattcaattatgtatgatttctttatggaactaaaacaaaatagaccg aaattctataacgaaatataatcctacacacataactataaaacaaatagtgataataaa cctaattttgataaattagttgaagaacgaaaaagcagttaaagaagcagatgattct tggaagaaagaaactgtcaaaaaatacgggaaactgaaacaaaactcgccagtagtaaaa gaagagaagaagttgaagaacctcaagcactaaagttgataaccaacaagaggttaaa actacggcttgtaaaagctgaagaacaacacacacaggttgacacacatttagttaaatt ccacagggcacaattacaggtgaaattgtaaaaggctcggaatatccaagctggaaaaat aaaacgggtacaaggtgaantcgttcaaggtcccgattttctaacaatggaacaaagcggc ccatcattaagcaataattatacaaacccacgttaacgaacctattttagaaggtctt gaaggtagctcatctaaacttgaaataaaaccacaaggtactgaatcaacgttaaaaggt actcaaggagaatcaagtgatattgaagttaaacctcaagcaactgaaacacagaagct tctcaagtgatgctcgagacgcgaatttaacaaaacacctaataatggttaaatatagagat gctggtacaggtatccgtgaatacaacagatggaacatttggtatgaagcgcagacaaaga tctcaataagccatcagaacaaaatgcataaacgttaacacacatgcaaatgggtcaagta tcatacggagctcgctcgacatacaagaagccaagcgaacgaatgcatacaatgtaaca acacatgcaaacggccaagttatcacaagcagctcgctcgacacaaaacagccaagcaaa acaaacgcataataacgttaacacacatggaacggccaagttatcatatggcgctcgccca acacaaaacagccaagcaaaaacaaatgcatacaacgttaacacacatgcaaacgggtcaa gtgtcatcagcgagctcgcccgacatacaagaagccaagtaaaaacaaatgcatacaatgta acaacacatgcagatggtactggcagacatatgggcttagagtaacaaaa
149.	atgaaaaaattagcaacagtaggttctttaaattgtaacaagcacttagtatttctcaagt atgccttttcaaaatgcgcatgcccagacacaaactcaatgaattggtgcgaataaacaagc caaatgtacaaaatcatcgctccttatggcgagtagtaccacaaggaatgacgcaagca caatatactgaattagagaagcctttaccccaattaaagcgtggcagtaatatgcaagac tataatatgaaattgtatgatgacgcaaaatattgctgataaatacaatgtgataatt acaactaatgtagggttatttaaccacatgctgttagagatatgaatggccatgcttta ccttttaacaaaagatggcaatttttatcaaacgaatgtagatgcaaatgggtgtaatcat gggtggtatgaaatgggtgcaaaaataaacaggtcatatgagtcacaagggccatatgaat cagaacacacacatgaaccaacagccacacatgcaacaaggtcatatgcaatcatcaaac catcaaatgatgagtcacaaagcaaatatgcattcatcaaatcatcaaatgaaccaaggt aacaacaaagttttaccagctgctggtgaaagtagacatcaagttatttactgcaagt atggccgactactatttagtatctgggttattcttagcatttagacgacgttcaacaaat aaa
150.	gtgcttaggagtgatttttatgtcttattccattggttagagtttcaaaagttaaatct ggaacaaatataacgggcatataaaaacatgttcaaaagagaataataatattgaaaat gaagatatagaccatagtaaaacttacttaattatgatttggtaaatgctaataaacag aatttttaataacttgattgatgaaaaaatcgacagaattatacaggcaaaagaaaaatt agaacagagcgcgattaaacacattgatgggttaattacatcagacaatgatttctttgat aatcaaacggccagagatacaaaagcagtttttgaatatgctaagaggtttttagaaca gaatcaggttaagataatttattatgcaacagttcacatggagcaaaaaacaccacat atgcatttagcgctgtttccaataactgatgagtgctgttgaagtgttaagaaagttgta ggtaataaaaaagctttaacagcgtttcaagatagatttaatgagcatgttaaacacga ggatgatgtttagaacgtgggcaatcaagacaagtaacaaatgctaacaatgagcaata agtcagataaaaacaaaaacagaatatcataagcaagaaatgaacgtgagagccaaaa acagaccatataaagcaaaaagacgataaattatgcaaggtacaaaaatcgttaaat acgcttaaaaagcctataaaatgttccgtatgagcaagaactgaaaaagtaggtggttta tttagcaagaataataaagaactggaaatgttgtaataagcaaaaagatttcaatgaa tttcagaacacagataaaagctgctcaagatatctcggaagattacgagtatataaagct ggtagagccttagatgataaagataaggaaatcacgagagaagatgatttattaaataaa gcagttgagcgtattgaaaaacgcagacgataatttaaccaactttacgaaaaatgcaag ccacttaagagaataatagaataagcgttaagcttttaaaaatcttactaaaagagttta gaacgagtttttaggaagaataacctttcggaagaggttaataagtttaacagaagatgaa cctatggca
151.	MSWFDKLFGEEDNSNDDLHRRKKRRQESQNDNDHDSLLPQNNDIYSRPRGKFRPFMSV AYENENVEQSADTIISDEKEQYHRDYRKQSHDSRSQKRHRRRRNQITFEEQNYSEQRGNSKI SQOSIKYKDHSHYHTNKPQTYVSAINGIEKETHKPKTHNMYSNNTNHRADSTPDYHKES FKTSEVPISAFITMKPKKLENGRIPVSKPSEKVESDKQKYDYVAKTQTSQNKQLEQEQ NDSVVKQGTASKSSDENVSSTTKSMPNYSKVDNTIKIENIYASQIVVEIRRRERKVLQK RRFKALQKREHKNEEQDAIQRAIDEMAKQAERYVGDSSLNDDSDLTNDSTASQLH TNGIENETVSNDENKQASIQNEDTNDTHVDESPNYEEVSLNQVSTTKQLSDDEVTVSNV TSQHQSALQHNVEVNDKDELKNQSRLIADSEEDGATNKEEYSGSQIDDAEFYELNDTEVD EDTTSNIEDNTNRNASEMHVDPKTOEYAVTESQVNNIDKTVDNEIELAPRHKDDQTNL SVNSLKTNDVNDHVVEDSSMNEIEKNNAEITENVQNEAAESEQNVEEKTENVNPKQT EKVSTLSKRPFNVMPTPSDKRMMDRKKHKSVMVPELKPQVQSKQAVSERMPASQATPSSR SDSQESNTKAYKTNMTSNKVENNQLIGHAETENDYQNAQQYSEQKPSVDSTQTEIPEES QDDNQLENEQVDQSTSSSVSEVSDITESEETTHPNNITSGQQDNDQKDLQSSFSNKNE DTANENRPRTNQDQVATNQAVQTSKPMIRKGNPKLPVSLLEEPQVIESDEDDWITDKKK ELNDALFYFNVPAPAEVDVTEGSPVTRFELSVEKGVKVSRI TALQDDIKMALAAKDIRIEA PIPGTSRVGI EVPNQNPPTVNLRSIIESPFSKNAESKLTVAMGYRINNEPLLMDIAKTPH ALJAGATGSGKSCVINSILMSLLYKNHPEELRLLIDPKMVELAPYNGLPPLVAPVITDV KAATQSLKNAVEEMERRYKLFHYHVRNITAFNKKAPYDERMPKIVIVIDELADLMMAP QEVEQSIARIAQKARACGIHMLVATQRPVSVNITGLIKANIPTRIAFMVSSVDSRTILD SGGAERLLGYGDMLYLGSNMKPIRVQGTFFVSDDEIDDVDFIKQOREPDYLFBEKELLK KTQTQSQDELFDVDFAFMVEGHIISTSLIQRFQIGYNRAARIIDQLEQLGYVSSANGSK PRDVVYTEADLNKE

[illegible]

159.	<p>atgatgaaaaagttaaaagcgagtgaaattagacaaaaaatctagatttcttgggtgaa aaaggacatatgggtgaaacctcttcgaccatttagtgcaaatgatgatgatacatattta tggattaatctcaggtgttagcaacattaaagaaatttttgatggagcgtgaaacacctaaa aagcaagaattgttaaacctctcaaaaagctatctgacaaatgatgtaaaatgttgggt ttccacagcgctgaccatacatctcttggaaatgttaggttaaccttccaatttggtgat tat ttaaacagaagcgattgaaatttgcttgggaatttttaacgagtgatgaaatggatgggt atggagccagataaattgtacgtttacgattcatccggaagatattggaagcatacaacatt tggcataaagatatgggcttgaagaagtcgtatttctcgcatggaagtaacctcttgg tatttgggtgaagggccttcaggaccgaacacttgagatttcttatgatcgcggaagca tatggacaagacgatccggcagaagaaatgtatccaggtggagaaaatgaacgctatctt gaagtattggaacttagtatttagtgaattcaatcataaaagattcatgttacacacca ttacctaataaaaatttgatactggcatggggcttgagcgtatggcctcagtttctcaa aatgtacgtactaactgaacacgatttatttatgcctataatgaatgaatcgaaaata gtatcaggttaacaatatatttagtaaacacagcaacagatgtggcatttaagtaattgct gaccacattcgtacgatctgatttgcatttcttgatgttgcatctacctgccaatgaaggt agagggtagtatttacctgatttgcgtctgctgcttctgcttttaacaaagcttagga atcaatagagccattttagtacaacatttggatatttggcagacatttggaacacatt tatccaaatgttgaagaaaagcagatttcatgaagcgtgtataaagctggaagaagaa cgattccatgaacacattagaagatgggttagcgattttaaattgaatttaaaaaagct aaagcgacaacaaatgaaatttaattgggaagatgcattttaaattgtagatcgtatggg ttcccaattgaaatttaactgaagaataagcattgcaagcaggttgaaggttgatattgaca acattcgagtcagaaattgcaacacacacgtgattgctgacgctcaagcagctcaaaattct caatcaatgcaaggttcaaaagtgaagtattgaaaaatattacatctgcaagctatttctt gggttagtactgctgacagctcaaacacactaacacacttgatatacaatgggtgaagaa ggtttcacaagttgaagcgggtgaacacagtatacttctgttaacggaaacacattttat gcaatcagttgggtgacaaagtggcggtacaggtatttggttataatgacaattttgaaatt gctgttagtgaagttaaccaaagcacaacatttgcacaaacttgcaaaaaggagtagtaca tttggcacaagtaaatgttggcgctacagtgctgctggaagtgaacaaaatgactgcagct gacattcaaaagacacatttagtgaacacatttattacatgcagcgttgaatcagtagctg ggtagatcgttttaaccagctgggttccacttagaagcagatcgtttacgttttggatttc tctcatttgggtccaatgactaatgatgaaatttgatcaagttgaacgcttagtaattgaa gaaatttgggaaggtattgacgtttaacattcaagaattggatattgctttagcttaagaa atggcgcaagtcgacttatttcggtgaaaaatggtagtctgtgctgttagtataattg gcacatttccaattgaattatgggtggtatttcatgctccgcaataacttctgaaattggc ttattcaaaatagtaagttgagtcaggtacagagcgtgggtgctgctgtatgtagcatta acaggttaagcagcttcttattttagaagatttcaagagaatttcaatcagatgaa tcacagctgaaagttgaattctgatgacaaagtagtcgaagttaacacaaatcaagat gaagaaaaagcattattaaaaaatttagagcaacgtgacaaaagaaatcacatcattaaa atgggttaatttaagaatcaagttgaagaaatcaatggctataaagatttgggttactgaa gtggatgaccaaatcgaaagcaattcgctcgcaaatggcagattttaaattcaaaacta caagatacaattatcatttctgcaagtaattgttgatgataaagtagtgggtgcaact gtccctaaattctttaaaaaataacgtttaaagcgggtgatttcaaaaataatggcacc atcgttgggtgtaaaggtggcggtgctccagataggctcaaggtggcggtacacacact gaaattcttcaaaatcattaaagctttatgaagattacattaaaaatcta</p>
160.	<p>MMKKLASEIRQYLDPFVEKGHMPVBPAPLVPIDDDTLWINSGVATLKKYFDGRETPK KEPRINQSKAIRITNDIENVGFTARHHTFFEMLGNFSIGDYFKQEAIFAWFELPSDKWMG MEPRDKLYVTIHPDEMYANIWHKDIGLEESRIIRIEGNFWDIGEGSPGNTEINIFYDRGEA YGODDPAEEMYPGGENERYLEVNNLVFSEFNHNKDSHYTFLPNKNIIDTGMGLERMAVSVO NVRTNYETDLFMPIMNEIEKVSQKQYLVNNEQDVAFKVIADHRTIAFAISDGAALPANEQ RGYVLRRLLRRRAVFRSQTLGINEPFPYKLVDIVADFMPEYYPNVKKEADFKRWIKSEEB RFHETLEDGLAILNELLKKAKATTNINEKDAFKLYDTYGFPIELTEBIAVQAGLKVDMT TFESEMQQQDRRAQRQNSQSMQVSEVLKNITASTFVGYDTATQAQTTLLHYLNGEE VSQVNEAGTFFYFMLTTEFFYAI SGGQVADTGIYVNDNFIEIAVSEVTKAPNQNLHKGVVQ FGVNVGATVSAEVNQNDRDRIQKNHSATHLLHAALKSVLGDHVNQAGSLVBADRLRDFD SHFGPMTNDEIDQVERLVNNEIWKGDIVNIQEMDIASAKEMGAMALFGEKYGDVVRVVMN APFSTELCGGIHVRNTSEIGLFKIVSESGTGAGVRRIEALTGKAAFLYLEDIQEFKNTMK SQLKVKSDQGVVQKLTLQDDEEKALLQLEQRDKEITSLKMGNI EDQVEEINGYKVLVTE VDVNPNAKIRSTMDDFGSKLQDNTIIILASNVDKVMVATVPKSLTNVKGADGLIKQMAP TVGGKGGGRPDMAQGGGTQPENI SKLSLFIKDIYKLN</p>
161.	<p>atgaatagtgagtttatatatggacgggttaacaaatttaggaggtgaagattttgagttta ataaagaaaaaagataaagatatcgcatataccattaggcggtgttggcgcaaatgtct aaaaatatgtatatcgttgaagttagacgataaattgtttatgttagatcgtggacttag ttccagaagacgaaattgctaggtattgatatttgataccagacatttccatcagctact gaaattaaagataaaattgaaggggtatatcttccacacggacatgagcagcgatgggt gcagtgagttatgttttagaacaatttagatgcaccagtatatggatcataattgacaata cgcttaattaaagaaaaatgaaagccgtaatttgataaaaaaagttcgtctactataca gttaataatgattcaattatgatgattcaaaaacgtgaattatagttctttaaatacgaca cacagtatctctgatagtttaggtgtttgtattccacattcatatgggtgcatgtgtgat acaggtgaaatttaagtttgaccaaagttttacatggacattatgcaccagataattaaag atggcagagatgggtgaagaagcggtatttgccttaacgtagttatctcattgagggcagag aaaactggaataaaactcggaataatgtagtaaacatacatgtatgatttgcatttgc aaagtcgaggtcgcttgatgtttcattgttatgcttgcgaactttatagctattcagcaa gttttaaaatttgctgaacagctaaatcgtaagtgctcatttttaggaagatcacttgaa agttctttaaatttgctcgtaaaatggggtatttcgacattcctaaagatttgctaat cctataacagagcttgataaattatcctaaaaatgaagtgataattatagctactggtag caaggaagacgttgagaagccttaagtcacaaatggcgcaacataagcataaaattgaatt atcgaagaagcgatctgtatttttagcaattacggctctcgtcgaatattggaagttatc attcggaatacatataatgagcttgtagctgctggcgacacataatttccaataacaaa aagattcactgctcaagtcaggttgcatggaagaataaaaaatgtagcttaataattatg aaactcgtaactatttctcgtacaaggtgaatttaaaatcgagatgacacatcggaag ctagcagctgaagcaggtgttgaccacgaagaagatttctcgttggaaaaaggagatgtc atataatcaacaggtgaagatatgataataatgaaaggttaattcaggaataatttta atagatggcatggatttggggatgaggaataatcgtgttgagagacgctcattcttta gcagaagatgggtatttattgctgttgtaacgttagatcctaaaaatagacgtatagct cggggacctgaaattcaactcgtgggtttgtatagctgtaaggtgaagacttatba cgtgaagcagaagagaagtagcgtgaatagtagaggtggtttacagaacaaacgata gaatggcttgaatttaacaaaaatatcgctgatcaaatgagtaaacattatttcgaaggt acaaaacgtcgtctcattgatttccatttctgaaatt</p>

162.	MNSEFIYGRVTNLGGKILSLIKKKNKDIRIIPLGGVGEIAKNMYIVEVDEMFMLDAGLM FPEDEMLGIDIVIPDISYVLENKDKLKGIFLTHGHEHAIGAVSYVLEQLDAPVYGSKLTI ALIKENMKARNIDKKVRYTNNDSIMRFKNVNI SFFNTTHSI PDSLGVCIHTSYGAIVY TGEFKFDQSLHGHYAPDIKRMABIEGEGVFLISDSTEAEKPOYNTPENVIEHHMYDAFA KVRGRLIIVSCYASNFIRIQOVLNIA SKLNRKVSFLGRSLESSFNIARKMGYFDIPKDLII PITEVDNYPKNEVII IATGMQGEFVEALSQMAQHKKINNIIEGDSVFLAITASANMEVI IANTLNLVVRAGAHII PNNKKIHASSHGCMELKMMINIMKPEYFIPVQGEFKMQIAHAK LAAEAGVAPEKIFLVEKGDVINYNKMDILNEKVN SGNILIDGIGIGDVGNIVLRDRHLL AEDGIFIAVVTLDPKNRRIAAGPEIQSRGFVYVRESEDLREAEKVRREIVBAGLQEKRI EWSEIKQNMRRQISKLLFESTKRRPMIIPVISEI
163.	atggaaataacaatgcctaagttaggtgagagtgttcatgaaggcaccattgaacaatgg ttagtttctgttgggtgatcatattgatgaatatgaaccattatgtgaagttattacagat aaagttgacagctgaagtccttccacgatatcaggaacaattacagaaattttagttgaa gcggggcagacagtagctattgatacaattatctgtaaaattgaaactgctgatgaaaag acaaatgaaacaactgaagagatacaagcaaaagtgatgagcatactcagaaatctact aaaaaagctagtgcacagtggaacagacatctactgttaacaaaaatcaaccacgtaaat aatgggtcgcttttccactgttattttaaactcgcttcagagcatgacattgattatca caagtttaggttagtggtatttgaaggtcggtgtaactaagaaggatataatgtcagttatt gaaaaatgggtggtaccacagctcaatctgacaacaagttcaacaaaaatcaacatcagta gtacatacaagtaaccaatcatctgaagacaatagtgaacacagcacaataccagtaaat gggtgctgtaagcaatttgcgcaaaaatatgggttaatagtgtgaacagagattccacatgca tggatgatgattgaagtagatgtctacaaatcttgtgaaacgagaaatcattataaaaaac agcttttaaaaaataaagaaggatataatctaacgttcttctgttcttcttgaagcgtga gcagatgcttttaaaagcatatcctttatataatagttagtggcaagggaatgaaattgtc ttacataaagacatttaatttcaattgctgttctgtgataaataaattatacgtacct gtgattaaagcatgcagacgaaaagttcaatcaagggtatagctagagaaatataacttta gcaacgaaagcggttaataagcaattgacagctgaagatagcagggcggtacatttacg gtaaataatactgggtacatttgggttcagtatcatcaatgggtattataaatcatccacaa gcagcgattttacaagtagaatcaatcggttaaaagccagtagtaattatgatgatgatt gcaattcgtaacatgggttaatttatgtatttcaattgacatcgatttttagatgggtta caaacaggttaattatgaatcatattaaacagcggtatcgaaacagtatacttttagaaat acaaatatatat
164.	MEITMPKLGESVHEGTIEQWLVSVDHIDREYELCEVITDKVTAEPSTISGTTIEILVE AGQTVVAIDTII CKIETADEKTNETTEEIQAKVDEHTQKSTKKASATVEQTSTAKQNP NGRFSFVVFKLASEHDIDL SQVVGSGFEGRVTKKDIMS VIENGTTAQSDKQVQTKSTSV DTSSNQSSSDNSNSTIPVNGVRKALQNMVNSVTEIPHAWMMIEVDATNLVKTRNHYKN SFKNKEGYNLTFFAFVFKAVADALKAYPLLNSWQNEIVLHKDINISIAVADENKLYVP VIKHADEKSIKGIAREINTLATKARNKQLTAEDMQGTFVTNNGTGFGSVSSMGI INHPQ AAILQVESIVKKPVVINDMIAIRNMVNLCSIDHRLDGLQTKGFMNHKQRIEQYTLEN TNIY
165.	
166.	
167.	atggaggacaacatgattttatgcaggtattttagcaggaggtattggttcgagaatgggg aacgtgocattaccaaaacaatttttagatattgataataaacggattttaatccatata attgagaagttcatttttagtgagtgaatttaagagattattatcgcaacgccagcacag tggattttcccatacacaggatatttttaaaaaataataacattacagatcaaccgtgtcaaa gtagttgcaggtggtacggatcgaaatgaaacaattatgaacattatcgaccatattcgc aatgtaaatggaattaataatgatgatgtgattgtaactcatgatgcgctaagaccattt ttaactcaacgtattatgaagagaacattgaagtagcagcaaaatattggtgcagtagat acagtcattgaagcaattgatacgtattgtaattgtctaaagataaacagaaatatacagat atccctgtgaaggaatgaaatgtatcaaggccaacaccacaatcatttaattataaatta ttacaagatagttatcgcccttaagtagtgaaacaaaaagaaatcttatcagatgcattgt aaaatcattgtcgaaatctggacatgcagttaaattggtagtggaactatacaacatt aaagtgcacaacccgtatgattttaaagtagcaaatgccattattcaaggtgatattgcc gatgat
168.	MEDNMIYAGILAGGIGSRMGNVPLPKQFLDIDNKPILIHTEKFIIVSEFNEIIATPAQ WISHTQDILKKYNTDQRVKVVAGGTDNRNETIMNII DHIRNVNGINDDVIVTHDAVRPF LTQRIKENIEVAAYGAVDTVIEAIDTIVMSKDKQNIHSIPVRNEMYQGQTPQSFNKKI LQDSYRALSSQKEILSDACKIIVESGHAVKLVRGBLYNIKVTTPYDLKVANATIQGDIA DD

169.	atgataaatattattggtgtatgacagtttaattggagggaacgaaatgaaagctttattactt aaaacaagtgtaggtcgcttttgccttttttagtgtaattgggattatggcaagtcctgaac gcggctgagcagcatatacccaatgaaagcacatgcagtaaacacgtagacaaagcaaca acagataaagcaacagttaccgccaacaaaggaagcggctcatcttctggcaaggaagcg gcaaccaacgtagcatcagcatcagcgcaggggaacagctgatatacaaacagcaagtaaca tccaacgcaccatcttaacaaaccatctacagtagtttcaacaaaagttaaacgaaacacgc gagctagatacaacaacagcctcaacacaaaacaaactcacacagcaacggttcaaat tcaaatgtctaaacagcatcactttcaccacgaatggtttgctgctaatgcaccacaaca acaacacataaaatattacatacaaatgatataccatggccgactagccgaagaaaaaggg cgtgctatcggtatggctaaatataaaacagtaaaagaacaaagaaagcctgatttaag ttagacgcaggagagccttccaaggtttaccactttcaaacagcttaaaaggtgaagaa atggctaaagcaatgaatgcagtaggttatgatgctatggcagtcggtaaccatgaattt gactttggatagcatcagttgaaaaagtttagagggtagtttagacttcccgatgctaaag actaacgtttataaagatggaaaacgcgctttaagccttcaacgattgtaacaaaaaat ggatattcggtatggaattattggtgtaacgacacagaaacaaagacgaaacaaagcct gaagggcattaaagggcgttgaatttagagatccattacaagtgtagacagcgaattgatg cgtatttataaagcagtagatacatttgttattatcacatttaggaattgaccttca acacaagaacatggcgtggtgattacttagtgaacaaatgaagtaaaatccacaattg aagaacagctattacagttattgtaggtcattcacatagacttcaaaatggtcaaat tataacaatgatgcattggcacaacaggtacagcacttgcgaattatcggtgaagattaca tttaattatcgcaatggagaggtatcgaaattataacccgtcattgatattgattaaagac gttgaattatgaacacgaaacaaagcatttagctgaacaaatatacaagctgatacaaca tttagagcaacaaactgcagaggttaatttcaacaaatataccattgatttcaaaaggaga agagatgacgtttagaacgcgtgaacaaattaggaacgcgattgcagatgctatggaa cgctatggcgttaagaatttctctaaaaagactgactttgcccgtgacaaatgggtggaggt attcgtgcctctatcgcaaaaggttaaggtgacacgctatgatttaattctcagttatacca tttggaaatacagattgcgcaaattagtgtaaaaggttcagacgtctggacggcttccgaa catagtttaggcgcacacaacacaaaaggacggttaagacagtggttaacagcgaattggc ggtttactacatatctctgattcaatccgtgtttactatgataataaaacgctctggc aaacgaatttaagctattcaaattttaataaagagacaggttaagtttgaataattgat ttaaagcgtgtatatacagtaacgatgaatgacttcacagcatcaggttgcgacggaat agtatgttccgtggtcttagagaagaaggtatttcattagatcaagtagtagcaagttat taaaaaacagctaaacttagctaagtagatgacgacagaacacacagctatgatttaggt aaaccagcagtaagtgaaacacagctaaaggacaaacaggttagcaaggttagtaagctt ggttaagatatacaacaaatgggtgacgacaaggttaggtccagcgaacaaacagct ccaggttaaggtttagtttgcgtgacgcatagaggaactgtagtagcgtacagaaggt tctggtgcgacaatagaaggagctactgtatcaagcaaggtgggaaacaaatgggtaga agtcagtgcttaaggttagcgcgcatgagaacaggttaccaaaaactggaactaatcaa agttcaagcccagaagcgatgtttgtattattagcaggtataggtttaaactgcgactgta cgacgtagaaaagctagc
170.	MTIYWCMTVNGGNEMKALLLKTSLVVLVLFVSMGLVQVSNAAEQHTPMKAHAVTIDKAT TDKQVPEPTKEAAHHSKGKAATNVSSASAGGTADDTSNKVTSNAPSNNKSTVSVSTKVNSTR DVDTQQASTQKPTHATATFKLSNAKTASLSRPMFAANAPQTTTHKILHNDIHGRLAEKKG RVIGMAKLKTVKEQEKPDMLDAGDAFQGLPLSNQSKGEEMAKAMNAVGVNDAMAVGNHEF DFGYDQLKLEGLMDFPMLSTNVYKDKRAPKPSITVTKNGIRYGIIGVTPPETKTKTRP EGLKGVFRPLQSVTAEMMRVYKDVDTFVVISHLGIDPSTQETWRGDIQVLSQNPQL KKRITVINDGSHITVLQNGQIYNNDALAQGTALANIGKTFNFRNGEVSNIKPSLINVKD RNVNTPINKALAEQINQADQTFRAQTAEVIIIPNNTIDFKGERDDVTRRETNLGNALADAME AYGVKNFSKKTDFAVTNGGGIRASTAGKVTYRDLISVLPFGNTIAQIDVKGSDVWTAFAE HSLGAPPTQDKDKTVLTANGLLHISDSIRVYDINKPSGKRINAIQILNKETGKFENID LKRUVYHVTMNDFTASCGDGYSMFGSPREBGISLDQVLASYLKLANLAKYDTEPQRMLLG KPAVSEQPAKQGGQSKGSKSGKDTQPIGDDKVMDBAKKPAKGVVLLLAHRTGTVSSGTEG SGRTIEGATVSSKSGKQLARMSVPRKSAHEKQLPKTGTNQSSEPFAMFVLLAGIIGLIATV RRRKAS
171.	atgcaagatgatacaaaaatcggttaaatagcgttaaaaagcctataaatgttccgtatgag caagaactgaaaaagtaggtggtttatttagcaaaagaaatacaagaactggaaatggt gtaataagccaaaaagatttcaatgaatttcagaacacagataaaagctgctcaagatatt tcggaagattacagagatataaaagtctggttagagccttagatgataaagataaggaata cgaagagaagatgatttataaataaagcagttgagcgtattgaaaaacgcagacgataat tttaaccacactttacgaaaatgcaaaagcacttaaaagagaatatagaatagcgttaag cttttaaaaatcttactaaaagagttagaacaggttttaggaagaaatacctttgcggaa agagtttaataagttacagaagatgaacacaaactaaatggttagcaggaacttagat aaaaaatgaatccagaattatattcagaacaggaacagcaacaagaacacacaaagaat caaaaacgagatagaggtatgcactta
172.	MQEYQKSLNPLKPINVPYEQETEKVGLFSKEIQETGNVVISQKDFNEFQKQIKAAQDI SEDEYIKSGRALDDKKEIREKDDLLNKAVERIENADDNFNQLYENAKPLKENIEIALK LLKILLKELERVILGRNTFAERVNKLTEDEPKLNLGLAGNLDKMNPELYSEQEQEQQKN QKRDGMHL
173.	atgaagatgataaacaatattcggttccggtaacagctagtgctttattattagcgct tggtggcgttagtgcacagactctaaagaaaaatataattttctttaaagctggagac gtaacagttgcagatacaatgaaaaaatcggttaaagatcaaatgcaaatgcattcatt actgaaatgtttaaataaaattttagctgataaataaaaaataaagtttaagtataagaag attgacgaacaaatgaaaaaatgcaaaagcaatacggcgttaaagataaaatttgaaaag gcccttcaacagcaaggtttaacagccgataaataaaagaaaatttacgtactgctgct tatcataaagaattatcagataaaaattaaaatctctgatttctgaaattaaagaagac agcaagaagcttcacacattttaataaagtttaattcaagaaaagcgacaaagaagc ttagatgataaagaagcgaacaaaaagctgaagaaattcaaaaagaagtttcaaaaagat ccaagtaaatgttggaatcgctaaaaaagaatcaatggatagctggttcagctaaaaaa gatggcgaattaggttatgttcttaaaaggacaaactgataaagattttgaaaaagcacta tttaagcttaaagatgggtgaagtagatcagaggttggttaaatcaagcttttgatatacatt attaaagctgataaaccaacagactttaacagtgaaaaacaaagcctgaaagaaaatta gtcgatcagaagatcaaaaaaatccaaattattgactgtagcatacaagaatcattta aaagaatcagatgttgacttttaagatcggtgatttaaatcagttgtgagaagataaaatc ttaaaccttgaaaaacttaaaacaggtggcgacaaagcgggcaatccggcatgagccaa
174.	MKINKLIVPTASALLGACGASATDSKENTLISKAGDVTVDATMKKIGKDQIANASF TEMLNKLADKYKNKVNDRKIDQIEKMQQYGGKDFEKALQQGLTADKYKENLRTAA YHKELLSDKIKISDSEIKEDSKASHILIKVSKSKSDEGLDDKEAKQAEIEQKEVSKD PSKFGIEAKKESMDTGSAKKDGELGYVLKGQTDKDFEKALFKLDGVESEVVKSSFGYHI IKADKPTDFNSEKQSLKEKLVQKQKVNPKLLTDAYKDLLKEYVDVDFKDRDIKSVVEDKI LNPEKLLKQGGAGGGSGMSQ

175.	atgcttttagtatttagctgggtgctcctaattctaacgataaatgaaagtaaaaaagat gacgcagacaatggtaagaacaagagattcaagttgacgcgcagcaagtttaacagat gtaaccaagaataatagcttcagaatttaaaaaagagcataaaaaatgctgattataaattt aactatgggtggatcaggggcattaagaaaacaaatgaaatcagggcgacacctgtgacgta tttatgtctgcgaataactaaagatgtagatgcatataaagacaagaataaagcgcatgta acataaaaatagcgaaaaatagcttagtatttaattggtgataaagattcaaatctacact tcagtaaaaagacttaaaagacaatgataaattagcattaggtgaagtgaaaactgtacca gcaggaaaaatagcgaaacagatttagataacaataacttatttaagaagtcgaaagt aaaatcggtttatgctaagaatgtaaaacagattataaattatggtgaaaagggttaatgcg aaacagggttttgggtataaaactgacttatataaacacaaaataaaaaattgactactga aagtaattaaagaagtagaacttaagaagccaatcacatcagaagctgggtgctacatca gatagtaaattagcnaaagagtggaatggaattcttaaaatcagataaagctaaagaata ctaaaagaataccactttgcagca
176.	MLLVLAGCSNSNDNNEKDDADNGKKQEIQVAAAASLTDVTKKLASEFKKEHKNADIKF NYGGSGALRKQIESGAPVDVFMASANTKDVDAKDRNKHAHTYKYAKNSLVIGDKDSNYT SVKDLKDNKDLALGEVKTVPAGKYAKQYLDNNNLFKEVESKIVYAKDVQVLNVYKGN KQGFVYKTDLYKQNKIDTVKVIKEVELKKPITYEAGATSDSKLAKWMEFLKSDKAKEI LKEYHFAA
177.	ttggcatcacatcacacttttaaaagatattattgaaattacaggtgtaactaaaaaagact ttacatttatcagatgaaataggattatttagttccagataaaaaatgataaaaaattatcgc gtttataaacagcaagacttagaaaaattacaaaagattttaatactcaagctcttttgat tttgatatcgctaaaaataaaacaatacatttcgtatgataatgaacaattgcgaaagtt ttatcagagcaaaaataagcaagtttagataaaaagatttctgacttacaattaattagacgc ctctgtatgtaatttattaaaggactctctctaatagataccagcattttaaacaaagaca ctacagtcacaaatgataaaagaagcattctataaaaatggtgcatacgaagacatataca tcatttttagacgtaaaagacagcttacaatcgagcatatcagacataaaattgacaact atcttcaataaatttaactcatatgtctttgagtcattatccaatccaagattgtagtgat ctcgtatttgagtggaaggcattttgaacactatcgctgattttgatgatgaaacatta tgctgtattgctaaaacataatgaagatgatacgcgtttcaaaagattactttaattcatat gataatcaaaaatttagcatcatatcatttcagaagctgttaattattttttgagcaattg aataagagcgcaaatttt
178.	MAYTYTLKDIETIGVTKRTLHYDEIGLLVPDKNDKNRYVYKQDLEKLQKILILKSFD FDIAIKQYISYDNEQLRKLLEQISKLKKISDLQIRRSVCFIKGLSLIDTSILNKT LQSQYDKEASIKYGHTKAYQSFIRRKDSLQSQDIRHKLTTIFNKFNMHSLSHYPIQDCSD LVFEWKAFMNTIADFDETLCIAKTYEDDTRFKDYFNSYDNQNLASYISEAVNYFLSNV NKSDNF
179.	atggcaaaaaataaaagcaaatgaagcatttagttaagcattacaagcatgggataatgat cacttgtagtggtattccaggagactcaatcgacgcagtagtcgtagtttagctacagtg agagatcaatttaaattttatcatgtagctcatgaagaagtagcaagcttagcggtgct gggttacacaaaataaactggtaaaaatcggttggtgcataaagatcggtggccctgggtta attcatttatataatgggtatgtagtgccaaaatggataatgtaccgcaatataatatta cttgacacaaagcaatagtagcagcacttggaacgaagcattccaagaaaacaaatttaca aaattatgtgaagatgtagccgtttataatcaccaaatgaaaaagggtgacaattgtgttt gaaatcggttaacgaagcaatcgtagcggcatatgaacaaaaagggtgtagctgtgtatt tgtcttaacgacttttaactgaaaaaataaagatacaacgaataaaccagtagatata tcaagaccacagtagtatcaccaaaaataaaagacatacaaaaagcggttaaaactaatt aataaaagttaaaaagcgtgcatgttaattgggtgtaggtgcaaacatgcgaaagatgag ctacgtgaattttatgaaatggctaaaattcctgtcattcattcattaccagctaaaaaca atcttgcggatgtagtccatatagtatcggttaacttaggtaaaatcggtaccacaaaaca tcttatcaaaaatgcaggaagcggtatttataattatgggttggtacaaactatccatat gtggattacttacctaaagaaaaatataaagccattcaaatgacacaaaatcctaaaaat atcggaacatcggtttcaattataatgtaggaattggtggagatagtaaaattgctgtgcat cagtttaactgaaaaatataaacatgttgctgaaagaccattcttaacaaaacgtagaa cgtaaaagcggtttgggataaaatggatggaacaaagataaaaaataaatagtaaacatta cgctccagaacgatataatggcatcaatcaataaatttataaagatgatgcagtgatttca gcagatgtaggtacagcaacagtttggtcaactcgatcttaaaccttggtgtaataac aagttcatcatttcaagttggttaggtacaatgggttgcggtcttccaggtgcaattgca tcaaaaatgcatatccaaatagacaagccatcgcaattgctgggtgacgggtgcatccaa atggttaatgcaagacttcgctacagcagtagacaatagattacotttaactgattttgta cttaatacaaacagtagtagcatttatataatgaacaaacagcagctggtgaattagaa tatgcagttgattttctgatatgtagcatgcaaaaatttgctgaggcagcggtggtaaa gggtatatacaattaaagatgctagcgaagtagatgctatagtcgaagaggcatttagcaca gatgtaccaacgatttagatgtagtatgttgatcctaagtgctgcgcattaccaggtaaa attgtaaatgaagaagcgcttggttatggttaagtgggcatttagatcaattactgaagat aaacatttagatttagatcaaatccaccaatttcagtggcagcaaaacggttcttta
180.	MAKIKANEALVKALQANDIDHLYGIPGDSIDAVVDSLRTVRDQFKFYHVRHEEVASLAAA GYTKLTKGIGVALSIGGPGLIHLNMGYDAKMDNVPQLILSGQTNSTALGTFKAFQETNLQ KLCEVAVYNHQBIEKGDNVFEIVNEAIRTAYEQKGVAVVICPNDLLEKIKDTTNKPVDT SRPTVVS PKYDKIKKAVKLINKSKKPVMLIGVGAHAKDELREFIEMAKIPVIHSLPAKT ILPDDHPYSIGNLKGITKTSYQTNQADLLIMVGTNYPYVDYLPKKNIKAIQIDTNPKN IGHRFNINVIGDSKIALHQLTENIKHVAERPFNLKTLERKAVWDKWMQDKNNNSKPL RPERIMASTNKFIKDDAVISADVGTATVWSTRYLNLGVNNKFIISSWLGTMCGCLPGAIA SKIAYPNRQAIAGDGAQFMVMDQFATAVOYDLPITVFLNNKQLAFIKYEQQAAAGELE YAVDFSDMDHAKFAEAAAGGKGYTIKSASEVDAIVERALADVPITVDVYVDFNAAFLPGK IVNEELGYGKNAFRSTIEDKHLDLQIPIPSVAAKRF
181.	gtagtagtttagggcttgcaacgcac
182.	caccatcatagaacatacaatttgtagc
183.	ctgatactggacaacatagaga
184.	aagtaacggttatctttcgatgggt
185.	atcttctggcactcaagtatatcaagac
186.	tggttaggtggttggtgtaggc
187.	ataatgcaactacaactcagcc
188.	ttgatcggtgtagtattttgattagat
189.	ctacaataactacagccgttaca
190.	gtgaatgaagttataaccagcag
191.	cacgctaaagcatcagtgacaga
192.	agcattttgatgtgttgctgtgtgtt

193.	gaatccccaagcacctaacc
194.	gtaaacgttgatcaagcacact
195.	tttgcaataacagcaacatctgggtgcag
196.	gaaacttctgaagctggaattgtacgg
197.	atgagaaaaactaaaatttgatgtacaattggaccagcttcagaatcagaagaaatgatt gagaatttaatacaatgcgtgtatgaacgttgacagattaaacttttcacatggtagtcat gaagagcataaaaggtagaattgtacaaattcgtaaagttagctaaaagatttagacaaaatt gtagcaattttatagatacaaaaaggtccagaaaattcgtacgcataatataaagacggg atcattgaaacttgaaacgtggcaacgaagttaattgttagcatgaatgaagttagaaggaaca cctgaaaagtcttcagtaacatataaaaacttaattaaacgtgttcaagtaggttcatac attttctgtgatgtggcttaattgaattacaagttaaagatattgaccatgctaaaaaa gaagttaaattgtatattttaaactctgggtgagcttaaaaacaaaaaagggtgtaactta cctggcgtaagagtaagtttacctggtattacagaaaaagatgctgaagatatccgtttc ggatttaaagaaaaatttgacttcattgcagcaagtttcgtacgtcgtcttagtgatgtt ttagaatttcctgtgaaatttttagaagaacaaaaagctaacatttcagtatccctaaaaatt gaaaacccaagaaggttatgataatttcgggaaattcttgaaagtgtctgaggtttaatg gttgcacgtggtgacatgggtgtgaaattccacctgaaaaagttaccaatgggttcaaaaa atttcgggttcacatacagctttaaaacttaaatgttaaagcaattgtagctgctactgaa agtggttcaacggcagctactatctccaaatctcgtccacattcagacattatgctgggtg actccaagtgaagaaaactgcagctcaattgttcaattgtttggggagttcaacctgtagtt aaaaaaggagctaaaggtacagatgcatgtttaaaactgcagttgcaacagctgttgaa actggttagagttatctaatgggtgatttaattcattattactgctgggtgaccaactgggtgaa actggaactactaatatgtagtaaaatccacctagttgggtgacgaaattgctaaatgggtcaa ggatattggcagctggatcagttgttgggtactacgttagttgctgaaactgttaaagattta gaaggttaaagatttatctgacaaagttatcgttactaactcaatcgatgaacgtttgtga ccttatgtagaaaaagctttaggcttaattacagaagaaaatgggtattacatcaccaagt gcaattgttgggttagaaaaaggtattccacagctgttaggtgtagaaaaagctgttaaa aacataagcaataacatgttagttacgattgtgctgctcaaggtaaaattcttgaaagga tatgcaaacgtacta
198.	atgcaattcgataaatttgacagtgctttaatggctttaaaaaatggagaaccaattatt gtagtagatgtagagaatcgtgaaaatgaaggtgatttagtagcgggttactgaatggatg aacgataaataccatataattttatggcgaaagaagcaaggggatataatgcgcaccagtg tctaaagattatgcacaacgtttggatttgggtacaaatgggttagatgaactccgacatc tttgggtacgcaatttacagtgagttatgatcatgtagatacaacaacaggaaatttagtct tatgaaactgcatttgactgccaacaaagctcatttgatccttagtgtaggaatgaagatttt aatcgtcctgggtcatttatttccatttagtagcacaagataaaaggcgtatttagctagaat ggacacacagaagcggctgtgatttagctaaacttactggtgccaagccgctggtgtc attttggagattatgaatgatgacggcacgtagggcgaaggaagatttacaacaaagttt aaagaaaaacatcaattaaagatgattacgatttgatgatttaattgaaatctgtaaaaaa tagaaccagaaaattgaatttaaggcgaaggtgaaaatgcctacagatttcgggaacattt gatattgtatgggttttaagcgacatacacagatgaagagatagttgtactgacaaaaggt gcaattcgacaacatgaaaatgtacgcttacattctgctgcttacaggcgatattttc catagtcacagctgtgattgtggtgctcaacttgaatcgtctatgaagtatacaatgaa catgggtggcatgatttatttctacctcaagaaggctggtggcataggtattgttaacaaa ttacgctcatgaatttaattgagcaaggatattgatcacgtaactgcaaatttagcatta gggtttgtatgaagatttgagagattatcatattgctgcacagattttaaattattttaac atcgaaacatcaatttataagtaataatccaagtaaaatttgagggattaaaacaat ggcatttgatattgcagaagaattgaagttatcgtaccagaacaggtaacataatcatgat tatattggaaacgaaaaaaataaaaaatgggtcatttaata
199.	atgaaaaatgaaaaaatttagtcaaaatcatcagtttgcttcatcaattgcactgcttttgta tcgaatcacagttgatgcagctcaacatatacacacctgaagcgagaaaaaagtagatgac aaaaatcactttatcaaaaacacagcaacatctgataatgataaattgaaattttctcaa attttaacgtttaattttcattaaaggataaaaagttatgcaaaagatacgttagtacttaag gcagccggaacataatttcaaggtataaaaaagcctaataccaaaagattacaattactca cagttttattggggcggttaagtataattgtttcgggttagttcagaatcaaatgtatgctgta aatgttgtgactatgcacctaataaaatcaaaatgaagaattccaagttcaacaaacatta ggtttattcttatggcgagatattaatatatactaatggcttatcaggtggattaaatgga tcaaaaatcattttcagaacagataaattataaacaagaaggttacagaactacgattgat agaaaaacaaatcataaataaattggctgggggtgttgaggcgcaaaaattatgaataat gggtggggaccataatgtagagatagttatgacccaacataggttaattgaactgttttta ggcggttagacaaagtagttcaaatgctgggtcaaaattttcttgcaacacatcaaatgcct ttattggcggtggtaactttaaccagaatttataagcgtactttctcataaaacaaat gatacaaaaaaattcaaaatcaagtaacttaccaaagagaattggatagatatactaat caatggaatcgactacactgggttggttaataactacaaaaatcaaaatcacgtaacgttt acatctacttatgaagttgactggcaaaacatactgttaaatatcggtagcaggtctt aaagaactaatcctggagta
200.	Atgaagaaaaaagcgttactaccattattttttaggtattatggcttttttggtggtgtg Gactatttcaaacctgaaaaacgtagtggtttttctacaatacattcgttagatccaatg Aaaaatgtatttgattggttggaataaacttataaacgacaattatggttttagctatt Attatccttgatttggtaattcgtattatttataccattcatgttgcacaaactataaa Aatagtcataatgatgcgtcaaaaaatgaagttgcaaaagccagaagttgaaaaaattcaa Gaaaaagtgaaacgtgcgctgacaagaagaaaaatggctgcaaaccaagaattaatg Caagtatataaaaaagtagacatgaaccgattaaagagtagttgggtgttttaccatg Ctaatccaattaccaatcatcatgggttatatactttgtacttaaaagccaactgttagat Ggtttgttttaattccacacttcttatggttcgatttaggacgtctctgattttggatt Acaattatgcccgtgttttatactttatccaagcatatgatatcaagtaaaacgatgcca Gacgaacaacgtcaaatgggttacatgatgtaggtcatttccaatattgattatctgg Attctaatgaagctcagcatcagcacttgggtttgtactggtcagtcagtcggcggttctt Gtagttcaaacacactttggaacatttatatgaaaaagtcgctaaaaaagaagtacaa Cctttcatgaagcgtatgaagagagcacacagcggcgagcaataaaaaaggcaaaaac acacaagttgtgctaaaaaagaaaaaagaa

[illegible]

gaccagtttaactgctgaagaaaaaactgaagcattagcaatgattaaacaaattacagat
caagctaaacaaggtattactgatgcaacaacaactgctgaagttgaaaaagcgaaagct
caaggacttgaagcatttgataacattcaaatcgactcaacagaaaaacaaaaagctatc
gaagaattagaactgcactagaccagattgaagcaggtgtaaatgtcaacgctgatgct
acaactgaagaaaaagaagcgtttacgaatgcttagaagacatttatcaaaagcaact
gaagataatttctgatcaaacacaaatgcagaaatcgctactgtcaaaaaatagtgcgctt
gaacaacttaaaagcacaacgtattaatcctgaagttaaagaaaaatgctttggaagcaatc
agagaagtggttaacaagcaaatagaataattaaaaatgcagatgcagatgcacggtg
aaagaaattgcacgtacggatttaggtagatattttgacagatttgctgataaattagat
aaaacacaaaaaatgcagaagttgctgaattacaaaatgtaacgatacctgcaattgaa
gcgattgtgctcagaatgatccagatgctaataatgataactaataatggtagataataat
gatgcaacagcaaatccaatgctaataacacacagaaaaatctggacaacctaacgta
tctgagacgacagctaatggcaagcagacgcttctccgacaacacccaataatagtgt
gctgcaacaggtgaacaacagcaacatcagcaactgatgatgcaaatgataaacgcgaa
gctaataacaattctagtgttagatgcatcaacaacagtcgacaaatggataaacgatga
actagtaaacagagaagtagaatcaactaataacggcacaactgataaacctgtacagaa
actgataatgcaacgcccagcagaaagcacaacaataacaatagtacaactacagcaaca
aacgagaatgcaccaacaggatcaacagcaacggctccaacaactgcgagcacagaagca
gcatcatctgctgatgacaaagataatgcatctgttaaatgattcaaaacaaaatgctgaa
gtaaaaataatagtgtgaatctcaatcaactaatgacaaggttgcaacacaaaatctgaa
aataaagctaaaggcagaaaaagatggttagtgattcaacaaatcaagtgatggttgatca
acaactgaaacattgccttcagcagacataacagaaccaaatgtaccttctaatacatca
aaagataaagaagaagtagcacaatacaactgatgcaggacaacttaagtctgaaact
aacgttgcatctaaagcagagataaatcgccaagcaagctgatactgaagtttcgaat
aaaccatcaacatctgcacatcttctgaagcaaaagaaaaaatgacttcaactaatcttagc
caaaaagatgatcggcaacagcagatactaatgatacgcacaaaatcagttggttcagct
gcaaaataaaagctacgcaaaacgacggtgccaatgcatctccagctacagtttcaaat
ggaagcaatagtgttaataagatatgcttaatgtaactaacactgacgaccaccaagct
aagacaaaatcagctcaacaaggaagtttaataaagctaaacaacaagctaaaacttta
ccagatactggtatgtcacataatgacgatttaccatatgctgaattagctctaggtgca
ggtatggcattcttaattagaagattcactaagaagaccaacaaactgaagaa

202.	atgaaactaaaaatcatttgggtactgcccacttttagcattgggattattatcaacgggtcgga gctgcattaccgagtcacgaagcatctgcagatagtaataacggctataaagaatgact gtggatgggttatcacactgttccctacacaaatcagtagatgggtattactgcattacat cgaacttactttatctcccgaaaaataaaatgttctttatcaagaaatgacagtaaa gtaaaaaatgaattagcttctcaacgtgggtttacaacagaaaaataatgccccaa acagcaacttatagcgttactttgaatgatggtaaaaaagtagtgaaatctaaagaaa aatgacgacgctaaaaatccaattgatccaagtacaatcaaacagatacaaatgtagtt aaa
203.	atggctattaaaaagtataagccaatacaaaatgggtcgctgtaatatgacttcggttagat ttcgcagaaatcacgaaaactacacctgaaaagtcattattaaaaccgctaccgaaaaaa gctggagcttaacaaccaaggttaaattgactgttaagacacatgggtgggacacaaacgt caataccgtgttatcgatttcaaacgttaacaagatgggtatcaatgcaaaagtgtattct attcaataatgacccaaaccgctcagcaaacatcgcttttagttgtatatgcagacgggtgaa aaacgatatatcattgtctcctaaaggattagaagtaggtcaaatcggtgaaagtgggtgct gaagctgacatcaaaagtggtaacgcatcaccattacaaaacattccagttggtacagta gtacacaacatcgagcttaaacctggtaaggtgggacaaatcgctcggtcagctgggtgca agcttcaagtacttggtaagaaaggtaaatcgtattaatcagattaaagatcgggtgaa gttcgtatgatcttatctacttgcgtgctacaatcggtcaagttggtaacctacaacac gaattagttaacgttggtaagcggacgttcaagatggaaaggtatccgtccaacagtt ctgggttctgtaataagcctaacgataccacacgggtgggtggtaaggtcggtgctcct atcggttagaccatctcaatgtcaccatggggttaaacctacgcttggtaagaaaactcg cggtgtaaaaaatcatcagacaaacttatcggttcggtggagtaagaaaaaa
204.	atgttagtaaaatcagtttaacccatttataaatttattattatcgtctttaaattgcagca ataccgattgtactgtttttactatgtttaactgtttttaaataaagggtatttatgca gctattacaacacttgggttaacattactaatgtcaataccatttttcaaatgcccagtt gggtatcgcttctgggtgcagtagtcgaaggtttcttccaaggtatcattccgattgggtat atcgttatgtaggcagtagttgttatcaaaaattactgttgaatctgggacaatttttaaca attcaagatagttatcaaaatatttccaagacacagttatcaagttttacttattgga tttgcatccaacgcattttagaaggtgcagcaggatttgggtgtaccaattgcaatttgt gcacttttataacacaattaggatttaattccattaaaagctgcgattgtattgttttagtc gcaaatgcagcgtctggtgcttttgggtgcgattgggtatccctgtagggtgtttagaaacg ttgaaattacctggagatgtttcagtagttagggtgttttcaatcagcaactttaacattg gcaatcataaatttccattatccattcttacttatttattattgatgggttttagaggt gttaagaaacattaccagcaatttttagtagtttcaatcacttatacacttactcaagga ttattcaactgtattcagtggaactgaaattagcagatattattccaccgcttatcaacaatg ttagcattagcagtagtttttcaaaaaattccaacaaacacatttatcggttataaaa gatgaagaaattgaacctgcaaaagcacattctgcaaaagcagtagttacatgcattggagc ccattcattgtatttaacagtcattgttaattgttggagtgccattctttaaanaactta ttcttaccacaaatgggtgctttatcatcatttagtatttaaatccaacttaccctggaacaa agcgaagttacgcataaaccatttagtattgacttttaaatattattggacaaacaggtaca gctatttttaactattattattacaattttaaattgtctaaaaaggttaactttaagat gcaggttagattattcggcgttacatttaagagttgtggttaccagttcttacaatttgt ttcattcttagcaatttctaaatacacaacttatgggtggtttaaagtcagcaatgggtcaa ggatttgcgttaagcaggttaattgtcttccagttctatcaccatttttaggttggataggt gtgtttatgacaggtacagttgtaataaacaactcattattgcaaccaattcaagcttct gttcacacaaatgggaacaggtgggttcaacttctgtatctgctaaacagttgggtggt gtagcggcaaaattgatttaccacaaatcaattgcaattgcaactgcagcagtaaaacaa gttggtaaggaatcagaattattaaaaatgacattgaaatacagtgtagttactaata ttcatctgtatttggactttcatcttgcattatta
205.	atgcttaaaaaataaaatattaaactacaactttatctgtgagcttacttggccctcttggc aatccgtttattagaaaaatgctaaagctgctaacgatactgaagacatcggttaaggaagc gatatagaatattcaaaaggacagaagataaaacaagtaataatggggcggtgactcaa aatattcaatttgattttgttaaaggataaaaaatacaaaagatgctttagatttaaag atgaaggattcatttagctctagaacaacatattacaactataaaaaaactaatcatgtt aaagctatgcgtagggcattccaatataatattgggtttaaanaacaaatgataaatatgtt tctttaatttaatttaccataaaataaaattgaatctacaacgtgagtcagatatta ggatacaatattcgggtgtaatttccaatcagcccatcactcgggtggttaattggatcattt aactatttcaaatcgatttagcttatcacacaacaaattatgtaagtgaagtgaacaacaa aactcaaaaagtgttttatggggcgctcaaaagcgaattcattcgcactgaatcaggtcaa aaatcagcctttgtatagcattttattttaggttacaacacctcatagtaagatcctaga gattatttgcgtccagacagtgagttaccacotcttgtacaagtggaatttaacccttca tttatcgccacagtagtctcatgaaaaaggttcaagcgatacaagcgaatttgaattact tacggaagaacatggatgtcactcatgcccattaaaagatcaacgcattatggcaacag tatttagacggacatagagtcataatgcatttgaatagaactatactgtgaaatc gaggtcaatttgaagactcatgaaatcaaggtgaaggacagaat
206.	atgaaatgaataaaattagtcaaatcatccgttgcacatctatggcattattattactt tctggtactgctaattgctgaaggtaaaaataacacagtcagcgtataaaagtcagtagc aaagttactttatacaaaaacacagccacagcagattctgataaattttaaatttccag attttaacatttaatttcatcaaaagataaaagttagtaaaagatactttagtacttaaa gctactgggaattataactcaggcttttgtgaacctaactcaatgactatgacttttca aaattatattggggagctaaatacaattgtatctataagctcacaactcaatgattcagta aacgtcgtttagttatgcacaaaaaaatcaaaatgaagagtttcaagttcaaaaacttta ggctatacatttgggtggtagcatttagtatcttaattgttttctggtggacttaattgga aatacagcttttctgaaacaattataataaacaagaaagttacagaaacacatttaagt cgcaacacaaattataaaaaatgttggctggggagttgaagcacataaaattatgaataat gggtggggaccttatggaagagatagcttccaccaacataatggtaattgaactcttctta gctggcagacaagcagtgatacgttggccaaaacttcatagcgaacacacaaatgccat ttattctagaagtaacttcaatccagaatttttaagcgtactatcacacagacaagat ggcgctaaaaaatctaaaattacagtaacttatcaacgtgaaatggatttataccaaatt cgttgaatggcttctactgggcaggcgcaaatataaaaactttaaaactagaacattt aatcaacatatgaaattgattgggaaatcacaaagtgaattgttagatataaaagaa actgaaaacaataaa

207.	atgaatagagagatgttgattttaaatagatcagatattgaacaagcgggaggtaatcat tcacaagtttatgtggacgcatttaacagaagcatttaacagccatgcgcacaatgatttt gtacaaccgcttaagcgtatttaagacaggatccctgaaaatggacacatcgcagatcga attattgcaatgccaaagtcataatcggtgggtgaacacgcaatttcagggtatgaatggata ggtagtaagcacagacaatccatcgaaaagtaataatggagcgtgcaagtggtgcattatt ttgaatgatccagaaaacgaattatccaattgcagttatggaagcaagtttaattagtagt atgcgtactgcagcagtttcagtgattgcagcaaacgatttggtctaaaaaaggatttaaa gacttaacaatcattggatgcgggcttaacgagacaagcaattcaaaagtattgtagag caattcgatcatattgaacgcgtgtttgtttacgatcaattctctgaagcatgtgcacgc tttgttgatagatggcaacaacagcgtccggaaatttaattttattgcgacagaaaatgct aaagaagcagtatcaaatggtgaagtagtcattacatgtaccgtaacggatcaaccatac attgaaatagattgggtacaaaagggtgcatttattagcaacatttctatcatggatgtg cataaagaagctctttatgaagctgacaagtcgtagtagactggtcacaatgtaat cgagaaaagaaaactattaaccaattggtgttagaaggtaaatccgcaagaagctctt catgctgaactaggacaacttgtgacaggtgacataccaggacgtgaagacgatgatgag atcatattacttaattccgatgggtatggctatcgaagatatttcaagtgtctattttatt tatcaacaggcacaacaacaaaattatgggacaacattgaacctatat
208.	atgaaaaaaattatggttattttcggtagcagaccgaagcaataaaaaatggcaccatta gtaaaaaattatgatcataatgggaactttgaagcgaacattgtgattacagcacaacat agagatatgttagatagtggttaagtataattgatattcaagctgatcatgatttaaat attatgcaagatcaacaaacattagcaggccttacggcgaatgcactgtctaaactgat agcatcattaatgaggaacaacccgatatgatttttagtacatggtgatactacaacgact ttttaggaagtttggcagcattttatcatcaaattccggtcggacatgtagaagctgga cttcgaacacatcagaaaatactcaccatttcctgaagagttaaatcaggtcatggttaagt aatattgctgaattgaattttgcgccaacagtaattgcagctaaaaattacttttgaa aacaaagacaaaagagcgtatctttattactgggaaatcacagttattgacgcattgtcaaca acagttcaaaaatgattttgtttcaacgatttataataaacataaaggcaagaaagtgtt ttactaacagcgcacgtcgtgaaaaatattggggaaacagatgcacagatttttaagca gtaagagatttggcagatgaataataaagatgttgccttcattatccaatgcacgtaat ccaaaggtaagagcgtatgcgaaaaaatatttatctgggagaaaatcggtatgaatttaatt gagccattagatgcgattgagttccataattttacaaatcaatcgtaacctcgtctgaca gattctgggtggtattcaagaggaggctcctacatttggaaaacctgtgttggtattagg aatcatacagagcgtcccgaaggcgttgaggcgggaacatcgagagtaattggcacagat tatgacaatattgttcgaaatgtgaaacaattgattgaggatgatgaagcgtatcaacgt atgagtcgaagcgaataatccatattggtgatggacaagcatcacgacgtatttgtgaagca atagaatatttttggttgcgcacagacaagccggatgaattcgtacctttacgtcac naa

209. atgattatgggtaatttgagatttcaacaggaatattttcgtatatacaaaaataataca
gaatcaacgacacacgtaaatgcgtattgggttaaactcgctaaaaatgttgaaagctact
aaaatgatgtatgcattatcgacaatttggtcaacaacatgcattatagaacattttttt
gatgttactaccgatgacaatttaacaatgatacttcatgaatttctgcctttatttgag
ataaaacaagttccatcttcttccgcaaacatgatttagaagcttttttaagcaagaa
ttaagttacttaccattttaatgatccactttattcaaaagttaaattgtttcagttcgct
gatcgcatatatactatttagattttcatgtgtccattttcgatgatatgcaaattgat
attttcttgatgatttatgcaatgcatactgtggcaatactgttattacaatactcga
cagcatgcacataaaatagaatgatgataaagacaatcaagatgcacatgcataatgca
ttagactcaaaactattttcgggttagagaataactcgacatccatttgatagttatttt
ccaatttaagcatccatttgaacaagctttatatcaaacgtattttgatgatgatgaca
tcaatagatatggcatcggttggtggttagtggtatttagctaatcatataatgagtcac
caacatgatgtcacatagggtatcatgtaccatcacatttaccaaatgatttacacgga
aatattgtgcggttaacgttaacaatcgatgcaaaagatgtatgtcaacgttttacaaca
gattttaataaatgtgtgttgcaaaatattgcgcaattacagtgccggaagctctcgctt
tcaatagagactatttttcatgttcatcatatgatgtcttggtgtaagtgtattt
gaggatgacatcaaaatcacatgatgcacatacatcttttagcggatattgaaatttttcca
catcaaacgggttcaaaatataatataacagtgccagcatatgtattgctctcaatcgag
acgctgagtgacttagttcgaaatatttatttgcaaatctactgaagaaatggaaataaaa
cgaacaactgttagatgaacttaatttgatgacagaacgtgatttcaatttatgacgat
atcaatttaagtttgctgagatagatgagcgcaaacagttgttaccttatttgagcaa
caagttgaagcaacgcgaatcatgtcgctgtgcaatttgacggaggtttataacatat
caaacatgaaatgcacgcgcgaatgatttagcacaccgtttgagaaccaggtatggtgtt
gaacccaatgctgtcgctgtcgctgtcatagctgaaaaaagtattgagatgataatgagctg
ataggtgtgttgaaagctgtgtgggttacctgccaatttgatccgaactatccaagtgat
cgtagggatgacattttaaaagatgaaacgctaaagttgtaataacgtaccagcttta
tatgaaaaatggtaaaacaaaatattaatcacattgatttgaataagatagcgtggaaaaat
attgataatcttctaaatgtaacacgtttagaagatcatgcttatgttttacacgtcg
gggacaactggtaaccctaaaggacactaatccgcaccgggtattgttcgcttggtc
catcaaaatcatatgtaccatttaataagagacgacgattttgttatcaggaaactata
gcctttgatgtcgcaacatttgaaatataatgtgtcattgctcaatgggtggaagctgatt
gttgctaaaaaagaacaattatataatccaatagcggtagaacaattatcaatgaaat
gacgttaatactatgtgtgtaacctctcattatttaacagattgctagtgaaacgaata
gaagttatgggtatcggttaaagtatttataatgggtggagaagtattgaatgctaagtg
gtggtattgcttaatacaaaacgaagcatcctcaaatatttaattggttatggacacact
gaaaatacaacatttacaacgacgtataataatcacctaaacaaagttccaaatcgattcct
attggttaaacgatttctgggtactcatgtttatatcatgcaagggcagcgctcggtgtggc
gttggtattcctggagaattatgtacaagtggtttgggttagctgcaggtattttaa
cagccagaattgacagcagataaatttatcaagattcaaatataaatcagctgatttat
agaagttgtgatatcgttcgtttgttaccgatggcaacatagattatttatatcgaag
gacaacacgttaagattcgagggtttaggattgagttgtcagaggttgagcatgcgctc
gagcgtatacaaggtatttaataagcaggttatttatttcaaaatcatgatcaagatcag
tatatcgttgcttattatgaagcagatgcatacatatcacataaagatttaaatcaca
ttacgtatgaccttaccggagttacatgataccagtttaatttcatgcataatgagcaaat
cctattactatttaagggaaattagataaagaagcattgcctatcatggactatgtcgat
acggatgcttatgtagcaccgagttacagataccgaacacttgctatgccaatttttgca
gatattttacatgtgaaatcaagtaggtattcatgataatttctttgaattaggtggcact
catataaagcaacgttagtggtgaatcggatagagggcatctactgggaaacgattacaa
attggtgatttatcaaaaagcgaactgtatttgaactagcacaagcgtattgctaaggtt
caagaacaaaactatgaagtgattccagaacactatagttaaagatgattatgtgctgagc
tctgcacaaaagcgtatgtatttatttggaatcaaacctaaagatagcgtgtataac
gtacctttttatggcggttatcatcagaacttaattgtagctcaatttgcgacaagcagtg
cagcgtttgatagcgcgacatgagattttacgaacacaaatattgttgttagatgagtg
gttcgacaacgtatttggcgagatgttgagttgactttgaagaagttaacacgcatttt
accgatgaacaagaatcatgcgcaattttgtagcaccttttaatttggaaaagcgaat
caaattagagtgagatcatatgaagtccttcatatgcatacctctttatagatacgcac
catatcatatgaagcgtatgagtaataatacaatttaattgaatgacttaacgcactttat
caacataaattattgttaccacttaaattgcaatataaagactatagtgagtgagtgctg
catcgtgatgatgacgaacatagacaattattggttatctcaattcaagatgaagtacct
attttaagcttaccgacagactatgttagacaaatattaaacgacaaatggagcaatg
atgtcatttacaatgaatcaacaatagagacgctacttcaaaagtatgtagaaaagcat
caaatctactgattttatgttctttatgagtggttgatgagcttggttaagtagatagct
cgaaaagatgatgttgttgcggtatgtgatgagtgccgctatgcataaaggcacggag
caaatgctaggcatgtttgctaactcgttggtatatagagggaacccgtcacctgataaa
atgtggacacagtttttacaagaggttaaggaaatgagtttggaggcatcagcagcatcaa
gaataccatcgaatgttttagtaaatgacttagatcaatcacatgatgcctcagcgaat
cctatttttagtgcattgttagtactacaaaacaaatgaaacgaatcatgctcattttggg
catagtaaatatacacacattcaacccaaatcagtgacggcgaaatttgatttatcttcc
atcattgaagaagatcgcgatgactatacaatcaatcagagtataataccgatttatat
cactcagaacagttcgtcacatgggttaactgaatgatgatttatgatttatattttg
aagcatcaagatcacatcaaaatttggatataccaaacggcgaggaacttcaaat
tgggtcaatcagcatgttaacgatcgaatgcttaattgtcccggaataaattcatcata
agttacttttaagaggttgcctcagcaaggttaactcatgttgccgtatgcatgaatgat
ttgacaatgacgtatgaacattacgcaactatgtggatgcatgacattgcgcacatgctccta
tcaaatggtgtgggcaatggtcaacgggttgcttgggttacagaacgtattttgaaatg
attgcggcgatgttggcgacagttaaagttaggtgcatcttatatacctatcgatttgat
tttcggaataaacgacaaggttgcaattttggaggatgctaaagtaactgcagtcagttct
tacggcgttgaaattgaaacgacattaccagtcattcaattggaaaaatgctaaaggcttt
gttgaatcaaggaataatgaacaatgatgatttacaatggcaatcaacttgaacacaca
cggatgttagataatgagatgtatgctatttacaacatcgttgcgacggggtgcctaaa
ggggttgcatacagcaacgaaatttggtaatttagtgcatgcatgggtcaactgaattg
caattaggcgcaaatgaagtatttttgcaacatgcaaatattgtttttgatgcatcagtt
atggagatttatgttgtttgttaaatgggtcatagccttggtgatccagatagagaggaa
cgtgttaatccgaacagttacaacaaactcattataagcatcggtgacgggttgcgctcg
attcggctacagatgtgttagttatggaagacttttatattgaaaagtgttatcagggc
ggggcaactagtcagcactcctttgttaaatatttgagaagcattgtggcacgtatttcc
aatgcttatggaccatctgagtcacagtcacatcagttatgggtcacatcatttgggt
gatttgatacctgagacgattccaattggcaaccccttatcaacatccaagtgtatatt
atgtcagatgggttgttatgcggtattgggtatgccaggcgagttgtgtattgcaggtgat
agtttagcgataggtatatttaactgcgcaaatattgggtgataaatggcaaaataat
ccatttggtaaggaaggtgtatcatagtggtgatttagcaggtatacatctgatggt
caaatgaaatttttaggaagaatagataaacaagtgaaagttaacgggtaccgattgaa
cttgatgaaattgaaatgcaatattagctattcgttggtatattcgtattgttgaaca

gtaagtcactttgatcgcatgatatatggaatgcttatatgtcggagagcaacaagtg
gaacaggatttgaagcaatatttaaatgatcagctgcctaagtatatgattcctaagact
ataacgcataatcgattgtatgccatttaaccacgaatgacaagggtggatactacgcgtttg
ccaaatccatcacctatacaacagctctaataaagtgtatagcgaacctctaatgaaatt
gagcagacatttgttgatgtatttggagagggtattgaaacaaatgatgtcgggtgtgac
gatgatttctttgaacttgggtgtaactcattagaggcgatgttagttgtctcgcattta
aaacgatttggccatcataatttcaatgcagacattataccaatataaaaccgtgcgacag
attgttaattatatgtaccaaatacaacaatcattagttgcattaccggataaatctttcg
gaattacaaaagattgttatgtctcgttataacttgggtatttttagaggatagtctaaatg
catcgacctctaggaatacactattgactggcgcgacagggttttttaggtgcttatctg
attgaagtactacaaggatacagtcacgcattttatgtttcatacgtgctgataatgag
gaaatagcatggtataaagtgtgacgaatttaaatgattattttcagaagagacgggt
gaaataatgttatcaaacttgaagtcattgttgggtgatttcgagtgatggatgagtt
gttttaccgaaaacatggatacatttcatgcaggtgctcgtacagatcactttgggt
gatgatgatgaatttgaaaaagtaaatgttcaaggtactgttgatgtcatcgtttggca
caacaacatcatgcaagggttaatatatgtgtctacgataagtgtgggaacttatttgat
atagacacagaagatgtgacattttcagaagcggatgtctataaagggcaactactaaca
tcaccatatacacggagcaaattttatagtgaaattaaaagattagaagctgtaataat
ggcttagatggtcggattgtacgtgttggtaatttgacgaatccttacaatggaagatgg
catatgagaaataaaagactaacggtttttcaatggtaattgaatgatttgttacaactg
gattgtatcggggttagcatggctgaaatgcctgtagattttcttttgggtacgact
gcaagacaaattgtcgcattagcacagggtcaacacaccacaaatcatttaccatgtgcta
tcacctaataaaaatgcccgtgaaatccttggtagaatgcgttaagcgcaagaaattgaa
ctcgtcagcgatgaatcatttaatgaaattttacagaacaagacatgtacgaaacgatt
ggattaactagtgttgaccgtgaacaacaactagcaatgatagatacaacattaacatta
aaaataatgaatcacatcagtgaaaaatggccaacgataactaacaattgggtgtatcat
tgggcacaatatatcaaaacaatatccaataag

210.	<p>atgaccaagaacaacaacttgcagaacgaattattgctgcagtaggtggatggataat atagataggtgcatgaactgtatgacacgtgtgctgtattaaagtattagatgagaataaa gtatgtagaccaagaactaaagccatattgtggtgtcatgggtgttatcacagatgaacgc attcaagtgtgtgttggacccaaataccacaccatcacatgatagtgaaaaaatggac agtgggtgttaaaactaggtgacccaataccacaccatcacatgatagtgaaaaaatggac tataaatcatatgcagctgataaagcaaaagcggaataaggaagcgcataaagcaaaacaa aagaatgggtgaagtgaataaagtattgaaatcaattgccaatatctttataccgttgatt cctgcatttattggagctggattaattgtgtgtattgcagcagtagctgagtaacttaagt gtggcaggctatatttcagggtgcttggattacgcaacttataacagatttaagtgcatt aaagacggtatgttagcatacttagctattttcactggtatttaagcggtcaagaatttt gggtgcgacaccaggacttgggtggcgtgattgggtggtaacacgttattacgggtattgct ggtaaaaaatatttttaagtattgtctcactggagaaccattgcacacctggacaaggtggg attattggcgttatttttgcgcttggatttttaagtattgtcgaaagagattacataaaa attgtgcaaaatgcgattgatattattgtaacgcgactattgcattgttgattgttagga ctattaacatctctttatctttatgccattagcagggtttgtttcagacagtttagttca gtagttaacggaattattagattgtgtggcgtatttagtggatttatcattgtgtgcaagc ttcctaccggttagttattgttagggcttcatcatatttttacgccaattcatatagaatg attaaccaatcagggtgctacttacttattgccaatgcagcgatggctgggtgctggaca taggtgtccgcattagcactttgggtgaagtgttaaacgcaacacacattacgtaataact ttaaagggtgcattgccagttgggtttcctagggtatcggaagaccattaatctatgggtg actttgccattaggctgcacctttcttaactgctgtattgtgtgggtattgtgtggcgt gtaataggtgggaattggacatattgtgtgcgaagcaataggcccaagtggtgtgctacta ttaccatttaattcagataatattgtattaggttatattgcaggattactgtgtgctgcat gctgggtgattcgtttgtacatatttatttgggaacgcaaaagcgatgcgacagacagat ttgttgggtgcat</p>
211.	<p>atgtctaaaattttaaattgtatcacgttagccgtggaatgttattaatcgtaactgca tgtggccctaatcgttcgaagaagatattgataaagcattgaataaagataattctaaa gacagcctaaccaacttacgatgtgggtggatggcgacaagcaaatggcgttttataaaa aaaattacgggatcaatatactaaaaaaactggcatcaagtaaaagtgttaaatattgtgt caaatgtatcaactagaaaaatatttgcctagacgctcctgcaggaagggccagatattc ttttctcttagcacatgataaatactggaagtgcctatctacaaggttagctgctgaaatc aaattatcaaaagatgagttgaagggtttcaataagcaagcacttaaagcgatgaattat gacaataagcaactagcattgcagctatcgttgaacaaccgcactttttataataaaa aaattagtgaaaaatgcacgcgaacgttgaagaagtgaagcctaattgctgccaacta actgatagtaaaagaacaaatcagggtattgtattgtatgtctaaaaatttctattttaa tatcgttttttatcggcaatgatgattataatttcaagaaaaatggcagtgaaatgat attcatcagctaggactaaattcaaaacatgtcgtcaagaatgtgcaagcattacaaaaa tggtagcgaacaaagggtatcttctaaaggcagcaacacatgatgtcatgattggtctttt aaagaaggaaaaagtaggacaatttgcactggaccgttgaacattaatgaatcatagaa acgtttgttaagatttaggagtaacaacattacctacagatgggtggcaaacctatgaaa ccatttctaggtgacgtggttgggtatttctgaatatagttaaacattgatttgggct aaagatttaagtgttatctacatagtaaaagatacattacaaaaatatacagatgaatg agcgaaatttactggacgtgttgacgtgaaatcatctaatccaaattttaaaggtgttgaa aagcaagcagctcatgctgaaccgattgcctaatatctctgaaatgcgcaagtttgggaa ccgattgggcaatgcaagcatatttatttcaaatggtaagaatcctaaacagcgttagat gagcgacgaatgataaacgcaaaatattaagattcttcatccatcaaaaaatgataag aaaggagat</p>
212.	<p>gtgaaagcattgaaatttatatggcgtggaagatttaccgtatgaggataatgaaaagcca gtcatgtgaaagtgcgaatgacgttattattaaagtacgagcgactggcattatgtgttca gacagctcacgatacaaaaaaatggggccatatacattaaaggtatgccatttggctcatgaa tttccaggtgtagtagatgccatttgggaagtgtttagcgtatgttaattgtggcgacaaa gtgacaggtgtgcccagcaatcacttgttatcaatgcgagatttgtttaaaaggtaaatat gcacgatttgaaaaagtatttgcctcattgggtcattatgaacctggatcgttcgcggaat gtcaaatgtccagcgcaaaatgttttaagggttccagacaatgttgattacattgaagca gcaatgtgttagcctacagcgttgggttgcgcatgggtttttataaatcgaatatcaaacct gggttagctgttgcagtaattgggtgtggcagtagtattgttagctattcaatgggca cgaatatttgggtgctgcacatcatcgtatagatatagatgcgcataaactagatatt gcaacatcatttgggcgcacatcaaaacatcaattcaaaagaagaaatcttgagaatttc atcgaaaatcattacgccaatcaaatcgatttagctatagaatcatcagggtgctaaagtt acgattgttgcataatttgacgctacctaataaaagggtggcgaggtgttattactcggaat ccattatgatgatttagatgtatcggttcattttgaaaaaattctgcgtaacgagttg acagtagtggctcttggaaactgttgcagtaatttccgggcaagagtggaagcgca accctacattatagaagcgaagataatttaagttaaagcctattatttctcattttta ccggttagaaaaaggcccgagacatttgataaatttagttaacaagaagaacgatttgat aaagtcattgtttacgatttat</p>
213.	<p>atgcaagcattacaacatttatttttaaagagctaccagtagaagaacagtagaattgaa aacgaaccttatttttagtagaaagatattgctgagattttaggatatgcaagatcagac aatgccatttagaaatcatgttgatagcgaggacaagctgacgcaccaatttagtgcatca gggtcaaaacagaaatgatcatatcaacgaatcaggattatcacagtctaattcttcgat gcttctaacaacagcaaaaacgaaaaaatcagagaacacgctcggaatttcaaacgatgg gtaacatcagatgtcctaccagctatttcgcaaacacggttatatagcgaacagacaattgta attgaacaacacattaaagatccagactacatcattacagttgtgactgagtaagaaga gaaaaagagcaaaacttacttttacaacaagaatcgggagaactaaacccaagcagac tatgtagatgaaatctttaaagtaactggcaccattagccacaactcaaatcgcggcagac tacggttatatcagcacaacaaagttaaacaacactactacaggaagctagactacaacgaaa gtaataaaacagtggtgtcttactcagaacacatgggcaagagttacacagaatcagac actatagcaattgtacgctctgacggttagagaagacacagttttacaacatagatggaca caaaaggcgatgtaaaatcatgaaatcatgactgaattcgggttatgaagctaattta gggggagcg</p>
214.	<p>atgaaattaaaatcatttagcaggttatcaatgtcagcgggtggtgcttactgcatgtggc aatgatactccaaaagatgaacaaaaatcaacagagtgcaaatcaatcaagcactaat acaacaaaagatgtttattgctttaaaagatgtttaaacaagccagaagatgctgtgaaa aaagctgaagaaacttacaaggccaaaagtgaaggaaatttcatttgaaaattctaat gggtgaatgggcttataaagtgcgcaacaaaaatctgggtgaagagtcagaagtagtatt gctgataaaaaataaaagtgatttaacaaaaagactgaaaaagaagatacaatgaatgaa aatgataactttaaataatagcgtatgattatcaaaaaagccattaaagaaggacaa aaagaaattgtgtgataattaaagaatgggtcacttgaagaagatgtaggcaaacctgtt tacaatatcgatttgaaaaaaggttaataaaaaacaagaagttactgttgatgctaagaac ggtaagatattaaagagtgagcaagatcac</p>

215.	atgaaaatgaaaaatattgcaaaaataagtttggatttaggaatattagcaacagggtgta aacactacaacggaaaaaccagttcatgccgaaaagaaacctattgtaataagtgaaaat agcaaaaaattaaaagcttattataatcaacctagattgaataaaaaatgtgacaggt tatatcagtttcatcaaccaagattataattatgaatatcatagatggtaattctgtt aataatattgtcttaattggcaaaagataagcaacattatcatacgggtgtacatcgta cttaatatattttcagtttaagaggataagagatttgaagggtgcaagactctattggg ggatcacaggtgcaaacgataaagctgtcgacctaatagcagaagcaagattatataa gaagatcactcgtggaatgatgattgactttttccattttaaataagataaagaagcg atgtcattgaaagagattgatttttaataagaaaaacacctattgataattatgggtctt tacgggtgaaataggtacaggaaaaattacagtcataaagaataactatggaaagtataca tttgaattggataaaaaagttacaagaagaccgtatgtccgatgttatcaatgtcacagat attgtagaattgaaatcaaaagttataaaagca
216.	mrkktkvctigpaseseemieklinagmuvvarlnfshgshheehkgridtirkvakrldki vailldtkgpeirthnmkdgielergnevismnevtegtpekfsvtyenlindvqvgsy illddglieqlgvkdidhakkevkdilnsgelknkkgvnlpgvrslpgitekdaedrf gikenvdffiaasfvrrpsdvleireileeqkanisvfpkienegedindiaieilevsdglm vargdmgevipekvpvmvqkdilrqcnklgkpvitatqmlsdsmqrnpratreaasdvana iydgtdavmlsgetaaglypeeavktmrniaavsaaagdykllsdrtklvetslvmaig isvhtalnlnvkaivaatesgstarkyrphsdiavtpseetargcsivwgvqpv kkrkstddallnnavatavetgrvsnngdliiitagvptgetgttnmmkihlvgdeiangq gigrsvvggttlvaetvkdlegkdlldkviutnsidetfvyvekalglitteengitsps aivglekqiptvvgvekavknisnmlvtidaagkifegyanvl
217.	mqfdnidsalmalkngepiivvddenrenegdlvavtewmndntinfmakearglicapv skdiaqrldlvqmvddnsidfgtqftvsidhvdtttgisayertltakkliidpsseakdf nrpghlfpvagdkglarngheteaavdlaktgkpagviciemndcgtmakgqdlqkf kekhqkmiididleyrkklepelefkakvkmpdtfgtdmygfkatytdeevlvtkg airqhnvrlhsactltdi fhsqrccdgaglessmkvinehggmiiylpqegrgigllnk lrayeliieggydvtanlaigfddeldrlyhiaaqilkyfniehinllsnpskfeglkqy gidiaerieivpvtvnhhdymetkkikmghli
218.	mkknklykssvassiallllntvdaaqhitpvekkvddkitlykttatsdndklnisq ilfnfikdkxydkdtl vlkaagninsgykknppkdynysqfywggkynvsvssesndav nvdyagmqneefqvqqtlysyggdininisnglsglsgksfsetinykqesyrtdid rktnhksigwveahkimnngwpygrdsydytynelflgrgssnagqnlplthqmp llargnfnefivslshkqndtkkiki kvtyqremdrytnqwnrlhwvgnnyknqntvtf tstyevdwnhtvkligtidsketnpgv
219.	mkkallplflgimvflagcdyskpekrsgffyntfvdpmknvldwlgmnlldnyglai iilvlviriillplfmlsnyknshmrqkmkvapevikiqekvkrartgeekmaangelm qvykydmnpiksmngclplmliqlplimglyfvlkdqldglfkyphflwfdlgrpdiwi tliagvlyfiqayvssktmpdegrgmymmmvispimilwiisssasalglwysvaaf lvqthfaniyyekvakkevqpfieayerehnggsnkkgkntqvvskkkkk
220.	mlfrqqkfsirkfnvgifsaliatvtfistnpttasaaeqnqpaqnpapadantqpn anagagantpaqpaapangggpavqpanqggqanpaggaacqntqpagggqadpnaag agpgnqatpanagqggngatpnnnatpanqtpanapaaagpaapvaanaagtdqdpnasn tgegsintltfddpaistdenrqdptvtvtdkvnyslinnngkigfvmseirrsdmfdk nmpqnyqakgnvaalgrmandstohngfngisiktvnkpsdelliinfmtnqnskggat nlvkhdkaktelatvnavktgtahlfkvpdtadridlqfipdntavadasrittnkdggy kysfidnvglfsgshlyvknrdlapkatnnkeytinteignngnfgaslkdqfkyevt lpqgvtyvnnsltttfnpgnedstvlknmtvnydgnankvtftsqgvttargthtkevlf pdkslklsykvnnanidtpknidfnekltyrtasdvinnnagpevtltadpfsvavemnk dalqgvmsqvdnshyttasieaynkklqgadtlinedanhvktanrasqadidglvtkl qaalidnqaaiaeldtkaqekvttaaqqskvtdqdevaalvtkinndknaiaieinkqta qvyttekdngiavlegdvtptvtpqakqdiigavttrkqgikksnaslqdekdvandki gkietkaikdidaattnaqveaiktkaindingtptattakaaaleefdevvqagidqap lnpdtneevaealerinaakvsgvkaieatttagdlervkeieiskienitdstqtknd aynevkaatarkagnatvsnatneevaeadaavdaaqgghldiqvkvskqevadtksk vldknaigtqakvkpaadtevenaynrkqeiqnsnastteekqaayteltdkkqeart nldaanstsdvttakdnisiaingvqaatttkksdakaieaqkaserktaieamndsttee qqaakdkvdqavvtanadidnaaanndvdnaktneatiaaaitpdanvkpaakqaladkv qagetaidngngstteekaaakqvgtektadaidaahtnaevaeakkaakiaiekiaip patttkdnakeaiaitkanerktaiagtqdiataeieaanadvdnnavtqansnieaansq dvdaqattgensidqvptvknkatarneitailnnklqeiqatpdatdeekqaadaean tengkanqaisaattnaqvdeakanaeainavtpkvkkqaakdeidqlqatqcnvinn dmatteekaaaiqlatavtdaknnitaaatddngvdqakdagknsiqstqpatavksna kndvdqavttqnqaidnttgatteeaknaakdlvlkakekaygdilnaqgtndvtqikdqa vadigqitadttdikdvakdelatkanekaliaqatadatteekqanqvgdaqltqgnqn ienagaidvntkanaiqaidpiqastdvkttnaraelltemqnkiteilnnnettnnek gndigpvraayeeeglnninaatttgdvttakdtavqkvqglhanpvkpagkkelqgaaa dkktqieqtgnasqgeindakqevdtelngaktvndqssstneyvnavkegkakinavkt fseykddalakiedaynakvneadnsnastssieaeakqlaelkgtadqnvngatskdd ievqihndldindytptgkkesattdlyayadqkknisadtnatqdekkqgalkqvvdq nvqtalesinnngvndngdvddaltqgkaaidaiqvdatvtpkanqaeievkaedtkesids dqitaeektealamikqitdqakqgitdattaevekakaggleafdnidstekqkai eetaldqieagvnnvadatteekaeftnaledilskatedisdqtnaeiatvknasal eqikagrinpevkknaleaievvvknqieiiknadadasakelartdlgrfyfdrfadkl ktqtnaeavaelqnvtpaieaivpqpndpdandtnngidndnatansnanatpentggpnv settangkadastptpnnsdaatgettsatddandkpgannssvdastnsptmdndv tskpevestnngttdkpvttednatpaesttnnnstttatnenaptgstatapttastea assadskdnaasvndsknaevnnsaesqstndkvaqpknsenkakaekdgsdstnqsmvas ttetlpsadi tepnvpnts kdkkesttnqtdagqlksetnvasneadkspskadtevs kpstsasseakekmts nlsqkddtatadntdqsgvgsaannkatqndganaspstvsn gsnsanqdmnlvntnddhqaktksaqqgvknkakqgaktlpdtgmshndlpyaelalga gmalfliirrfkkdqgqtee
221.	mklsfvtatlalglstvgaalpsheasadsnngykemtvdgyhtvpytisvvgitalh rtyfifpenknvlyqeldskvknelasrgvtttekinnagtatytlindgnkknvnlkk nddaksnidpstikqigivvk
222.	maikkykpitngrrmtsldfaieitkttepskllkplpkagrnnqgkltvrhggghkr qyzvidfkrnkdginaqvdsiqydpnrsanialvvyadgekryliaipkglevqgivesga eadikvgnalplqnipvgtvvnhieikpgkggqarsagasaqvlqkegyvlirlrsg vmlistcratigqvgnlqhelvmvkgagrsvwkgrirptvrgsvmnpndhphgggegrap igrpsmpspwqkptlgktrrgkssdkliivrgkrrk

223.	mlvntfnfpdnlissliaaipivflclctvfkmggiyaaattlvvtlliaipffklpv giasgavveffqgiipigiyvmavillykitvesgqfltiqdsitnisqdqriqvllig fafnaflegaagfgvpiaicalltqlgfnplkaamclvanaasgafgaigipvgvvet lklpgdvsvlgvsqsatltlailnfiipflifiidgfrgvketlpailvsvsitylttqg lltvfsgpeladiipplltmlalavfskkfipkhiyrvnkdeiepakahsakavlhaws pfivltviviwsapffknflpngaalslvfkfnlpgtisvthkplvltlniigqgt ailltiitiilmskkvnfkdagrlfgvtfkelwlpvlticfilaiskittygglasaamgq giakagnvpvlspilgwigvfmgtgsvvnnsnfapiqasvaqgigtsgsllvsantvgg vaaklispqsiataavkqvgkesellkmtlkysvcilificiwtflisll
224.	mlknkiltttlsvsllaplanpllenakaandtedigkgsdieiikrtektksnkvgwtq niqfddfvkdkkynkdalilknqgfissrttyynkktnhvkamrwpfgyniglktndkyv slinylpkniestnvsqilgyniggnfgsapslpgngsfnyksisytqgnyvseveqg nskswlwgvkansfatesgqksafdsdlfvgykphskdprdyfvpdselpplvqsgfnps fiatvshkgsdtsfeitygrnmvdthakrsthynsyldghrvhnaafvnrnytvky evnwkttheikvkqgn
225.	mkmmklvksvatsmalllllsgtanaegkitpvsvkvdvdkvtlyktatadsdkfkisq lftfifikdkdykdtlvtkatgninsgfvkpnndydfsklywgakynvsiassqndsv nvvdypaknqneefqvqntlqytfggdisisnglsggngntafsetinykqesyrtils rntnyknvgwgveahkimnngwgyprdsfhtyngnelflagrqsayagqnfiaqhomp llsrnsfnpeflsvlshrdgakkskitvtyqremdlqirwngfywaganyknkfrtf kstyeidwenhkvklltdketennk
226.	mmremlylnrsdieqaggnhsqvvdal teal tahandfvqplkpylrqdpenghiadr iamppshiggehaesigkwlgskhdnpskrnmerasgvilindpetnyplavmeasliiss mrtaavsvlaakhlakgfkdlitligcgligdkqlqsmleqfdhiervfyvdydfseacar fvdrrwqqqrpeinfiaatenakeavsngevvitctvtdqpyieydwlgkafisnismdv hkevfikadkvvdwsqcnrekktinqlvlegfkskealhaelgqlvtgdpipgreddde iillnpgmaiedissayfiyqgaqgnigtltlnly
227.	mkkimvifgtrpeaiknaplvkeidhngnfeanivitaqhrdmlsdvlsi fdiqadhdln imqdgqtlagltanalakldsiineegpdmilvhgdtttt fvgslaafyhgipvgvheag lrthqkyspfpeelnrmvsniaelnfaptviaaknllfenkdkerifitgntvidalst tvqndfsvtiinkhkgkvvlltahrrenigepmhqifkavrdladeykdvvfiypmhrn pkvraiaekylsgrnriellepldaiefhmfngsylvlt dsggigeeaptfgkpvvlr nhterpegveagtsrvigt dydnirvkvqlieddeayqrmsqannpygdgqasrricea ievyfgrlrdkdpdefvplrhk
228.	mimgnlrfqgeyfyriyknntestthrnaywvklaknveatkmmyalstivqgghasirhff dvttddnltmlheflpfieikqvpssanydleaffkqelstyhndspl fkvklfgfa daayilldfhvsifddsqidiflddlcnayrgntvintrqhahinrmdkdnqdashia ldsnyfrlennsdihidsyfpikhpfeqalyqtyliddmts idmaslavsvylanhimsq qhdvtlglhvpshlpndlhgnivplltidakdvqrfttdfnkcvlqmsqlqcakssll sletifchcyhnmsscndviedvhqihdahtsladieifphqhgfkliynsaaydlisie tlsdlvrniylqiteengnkrtrtvdelnlmtedidglyddinlsleiddaqtvtvltfeq qveatpnhvavqfdgvfityqtlinarandlahrlmqvgvepndrvaviaeksleiam igvllkaggavvpdpnypsdrgeyilkdvtpkvvityqalyengkqinhiidlnkiawkn idnlskntledhayviytsqgtgnpkgtliphrigivrlvqhnyvplneettillsgti afdaatfeiygallnggkllvakkeqllnplaveqlinendvntmwtsslnqiaseri evlvelkyliliggevinakvdl lngkpkhpgiingyptenttfttynipnkvprip igkpllgthvymgerrrcvgvgipgelctsgfllaagylngpeltadkfikdsninqlmy rsgdirlpdpdnidylrkdqkvkrgfrieelsevehaleriqginkavvivqnhdqdg yivayveantlshnkiksklrmtpemipvnmhieqipitingklkdkalpmidyvd tdayvapstdehllcqifadilhvnqvgihdnffellgghskatlvrnri eastgkrlq igdillqkptvfe laqalakovqeqnyevipetivkdvyssaqkrmyllwksnhkdvyn vpflwrlsselnvaqlrgavqrliaheillrtqyivvdddevgrivavadvdfeevnthf tdegeimrqfvpfnlekpqirvryrslphayl fidthhiindgmsniqlmndlnaly qhklldlplklqkydysewmshrdmtkhrqywlsgfkdevpilspltdyvrpniktngam msftnngqmrqllqkyvekqitdfmfmsvmtllsryarkddvvgvsgvmsarmhkgte qmlgmfantlvrgqpspdkmwtqflqevkemsleayehgeypfeclvndldqshdaern plfdvmlvgnnetnhahfghsklthiqpksvtakfdlsfiieedrdytnieyntdly hsetvrhmgngcmimidylkhqdtlqicdipngteellnwvnthvndrmlnvpngksii iaamlatvkvgasypididfpnkrggailledakvtavmsygeiettlpviqlenakgf veskenegyddlhgnqlentamldnemyaiytsgttgmpkgvairqrnllnlvhwstet qlgdnevflqhanivfdasvmeiyccll nghtlvipdreervnpeqlqqlinkhrvtvas iplqmcsmvedfyeklitggatstasfvkyiekhcgtyfnaypsestvit sywshhcg dlipetipigkplsniaqvymisdgllcgigmpgelciagds laigynrplmadkwqnn pfgkgklyhsgdlarytsdggieflgridkqvkvngyrieldieenailairgisdcvvt vshfdthdilnayyvggeqqveqdlkqylndqlpkymipktithidcmplttndkvdctrl pnpspiqsnkvyspeneieqtfdvdfgevlkqndvgvdddfelggnsleamlvshl krfghhismqtllyqktvrgivnmyqngqslvalpdnlseqlkivmsrynlgiledsls hrplgntlltgatgflgayllievlggyshriycfiradneeiawyklmtlnlndyfseetv eimlsnievi vgdfeemddvvlpenmdti ihagartdhfgddde fekvnvqgtvdvirla qqhharliyvstisvgytdidtedvtfseadvkygqlltspytrskfyseklvleavn gldgrivrvgnlt npyngvrwhmrniktnrfsmvmdllqldcigvmaempvdfsfdvtt argivalaqvntpqiiyhvlspnkmpvksllcevkrkeielvsdesfneilqkqdmyeti gltsvdsregqlamidttltl kimnhisekwptitnnwlyhwaqyikti fnk
229.	ntkeqqlaeriaaavggmdnidsvnmcmtrvrikvldenkvddqelrhidgvmgviher iqvvvgpgtvnkvanhmaelsgvklgdipphhndsekmadyksyaadkakankeahkakq kngklnkvksianifiplipafigagliggiaavslnmvagyisgawitqli tvfnvi kdgmlaylai fgtinaakefgatpglpgvggttlltgiagknilmnvftgeplqpgggg igvifavwilsivekrhlhki vnpaidiivtptialli vglitifi fmplagfvdsdls vvnlgisiggyvsgfligasflpivmlgihhiftpihleminqsgatyllpiaamagagq vgaalalwvrcrnttlrntlkgalpvglfigepliygvtlplgrpfltcacigggigga viggighigakaigpsgvsllplisdnmlygiagllaayaggfvctylfgttkamrqt llgd

230.	mskilkcittlavvmlilvtacgpnrskedidkalkndskdkpnqltmwvdgdkqmafyk kitdqytkktgikvklvniqgndqlenisldapagkgpdiffiahndtgsaylqglaaei klakdelkgfknqalkamnydnkqlalpaivettalfynkklvknaptleeveanaakl tdskkkqvgmlfdaknfyfnyplfgnddyifkknsgseydihqlglnskhhvknauerlqk wydkgylpkaathdvimigl fkegkvvgfvtgpnwneyqetfgkdlgvttlptdgggkpmk pflgvrwylseyshkkywakdlmlyitskdtlqkytdemsetgrvdvksnnpnklyfe kqarhaepmpnripemrqvwepmgnasi fisngknkpqaldeadnditqnikilhpsqndk kgd
231.	vkalklygvedlryednekpvisandvilkvratgicgsdtsrykkmgpyikmpfghe fsgvvdaisdvthvngdkvtgcpaipcyqceyclkgeyarceklfvigsyepgsfaey vklpaqnvilvvpdndvyeaamvepsavvahgfyksniqpgmtvavmgcgsgillaiqwa rifgaahiiiaididahklidiatslgahqtinskeenlekfiennyhyanqidlaessgakv tiggiltpkkggevvllgipyddiedrvhfekilrnelvtcgswncslsnfpkgkewa tlhymtkdinvkpiishflplekqpetfdklvknkerfdkvmftiy
232.	mqaigtfnfkelpvrtveienepfyvgkdiaeilgyarsdnairnhvdseklthqfsas ggnrmmiinesglysli faskqskneki retarkfkrvvtsvlpairkhgilyatdnv ieqtlkdpdyiitvltteykkekeqmlllqgeigekpkadyvdeilkstgtlatqiaad ygisagklnklhearlqrkvnkqvwlysehmgsytesyetdiaivrsdgretdvltqrwt qkgrlkheimtefygeanlgga
233.	mkllkslavlsmsavvltacgndtpkdetkstesntnqdtnttkdvialkdvktspedavk kaeetykqgklkgisfensngewaykvtqksgseesvlvadknkkvinkktekedtmne ndnfkydsaidykaaieggqkefdgdikeyslekddgklvynidlkkgnkkgevtvdakn gkylkseqdh
234.	mknkniakisillgilatgvntttekpvhaekkpivisesnklkayngpsieykntvg yisfippsikfmmiidgnsvmnialigkdkqhyhtgvhrnlfiyvnedkrfegakysig gitsandkavdliaearvikedhtgeydydfpfkideamsleikdfklrkyliidnygl ygemstgkitvkkkygkytfeldkklqedrmdsvinvtdidrieikvika
235.	Ttgaataatattttaaaggttttaatacaacagatttttagcgttaattatcatcatcgcg Acattcagtaattctgcaaatgcccagatagcggtagctttgaattatgaggtttacaaa Tacaataccaatgacacgtcaattgctaattgactatttttaataaccggcaaatgacatt Aagaaaaatggtaattgtatgttcaaataactgtcaaccacagtcattggattactgga Atgagtatcgaaagacataaagaaaatattatttagtaaaaaactgccaagatgaacgc Acttctgaatttgaaagtaagtaagttgaacggtaaaatagatggaataattgacgtttat Atcgatgaaaaagtaaatggaaagccattcaaatatgaccatcattacaacattacatat Aaatttaattgaccaaactgatgtagcaggtgctaatagcaccaggtaaagatgataaaaat Tctgcttcaggtagtgacaaagatctgtatggaacgactactggtcaaatgaaatccta Tatttgaataaagacaaagtagaaaaatccacaacaaatgctggtacacctgcataata Tatcaataaccagttgcatccttagcattattaatcgcaatcacattgtttgttagaaaa aatcttaaaaggcaatgtggaa
236.	atgacaaaaacattatttaaacagtaagtatcaatcagaacaacgttcatcagctatgaaa aagattacaatgggtacagcatctatcatttttaggttcccttgtatatacagcgagac agccaacaagtcactgcccgaacagaagctacgaacgcacctaataatcaagcacacaa gttttccaagcaacatcacaaacaaatattttccaagtgcacaaagatggctcttcagag aagtcacacatggatgactatatagcacacccctggtaagtaataaacaataataaaa tattatttccaacacgtgtttaacaatgcatcatcttggaagaatacaaatttacaat gcaacaatcaagaattagcaacaactgtgttaacgataataaaaagcggtactagata acaatcaatgtttgagttgaacctggatataagagcttaactactaaagtacatatgtc gtgccacaaatattataatcatagatataactacgcatttggaatttgaaaaagcaatt cctacattagctgacgcagcaaaacacaaacatgttaaacgggttcaacaaaaccagct caacctaaaacacctaactgagcaaaactaaaccagttcaacctaaagttgaaaaagttaaa cctactgtaactacaacaagcaaaagttgaagacaatcactctactaaagttgtaagtact gacacaacaaaagatcaaaactaaaacacaaactgctcatacagttaaaacagcacaaaact gctcaagaacaaaataaagttcaaacacctgttaagatgttgcaacagcgaaatctgaa agcaacaactcaagctgtaagtgataataataacacaaactaaacaaagttacaaaacat aacgaaaacgcctaaaacaagcatctaaagctaaagaattacacaaaactggtttaactca gttgataactttatttagcacagttgctctcgcaacacttgcccttttaggttcattatct ttattacttttcaaaagaaaagaatctaaa
237.	Lknilkvnttilalilililifsnanaadsgtlnyevykyntndtsiandyfnkpaki Kknklyqvqitvnhshwitgmsieghkeniiskntakdertsefevsklngkidgkidvy Idekvngkpfkydhhyntiykfngptdvaganapgkddknsasgsdkgdgtttgqsesn ssnkdkvenpqtngatpayiytipvaslalliaitlfvrkkskgnve
238.	mtkhylnskyqsegrssamkkitmgtsiilgslvyigadsqqvnaateatnapnngstq vsqatsqpinfqvqkdgsssekshmdymqhpqkvikgnnyfqtvltnnasfwkeykfyn anngelattvndnkkadrtinvavepgykslttkvhiivpqiynhrythlefeikai ptladaakpnnvkvppkpapgtpteqtkpvqpkvekvpvtvtttskvednhsckvvst dttkdqtkttqtahtvktatgaqgnkvqtpvkdvataksennqavsdnksqgtknkvtkh nepkqgskakelpktgltsvndfistvafatalligslililfkrkesk

239.

atgacaaagaaagaaaggattataaaaaaagtcttgagcaacaaaaaacacgggtaaaa
 atatacaagtcaggaaagctgggtaaaaagcaagttatgaatagaattggttaaaa
 acaatggggctaccatttttaagtaaaaaacgaaatatacaagaaatgtgactgaaagacg
 aaaggtcataaattaaaaaaagtgcagctaaaaacaacagccctagtgtggtggagcattt
 acatttaatatgttgataatcatcaagcatttgcctgcctcagaaacaccaatcacctct
 gaaattttcatccaatagtgagacagtagccaatcaaaattcaactacgattagaactca
 caaaaagaacagtcatttctacaagtttggaatctaacatttctaatagtacaaaataag
 caaatgtcttcagaagttacaaaatacagctcaatccagtgaaaaagctggaatttagtcaa
 caaagtagtgaaacatcaaatcaatcatctaaagttaaatacatatgcctccacagaccat
 gttagaggtacaaactatcaaatgataatactgcacacaagatcaaaaataagttcttcg
 aatgtaacctcttaagtcacacaaatcaaacacgctcatctcagaaaaagaacttagctcc
 aattcaaccagtcgaatcgaaacaaaagcaaccgattcattagcgactagtgaagcaegt
 actagtcacaaatcaaatatcttaactctgacatcaacatctacttcgaatcaatcgagtcct
 acttctcttgcaaatttaagaacatttagtagatttactgttttgaatcagatggcgaca
 ccgacacacacatcaacgacacaaacttcaagtcctgacatctaatctgttgggtgaac
 aaagataacttttaatgaacatataatctatctggatctgcgagctatgatcttaaaaa
 attagtctacttcaacgacagcgcatatagtcaaaaggggtccatctcttaaacact
 cgattagattcaaaccttagcttccgttttataggtaaagtttaaccttggtaatagatata
 gaaggttattctctgtatgggtgtagcaggtggagatggcattggcttggcatttccacca
 ggccctttaggacagataggtaaaagaggggtgccttggaataggcggtttgaataat
 gcctttgggttttaaatggatagctatcataacacatcaactcttagatctgtatgctaaa
 gcaaaagcagatccacgtaatgttgggtgggtgggtgcttttgggtgcttcgtaagtaca
 gatagaatgggtatggctaccactagggaatcaactgcggcttaaatataatgtacaacct
 actgacaattcattccaagattttgtcattgactataatgggtgatacaaaagtgtatgaca
 gtgacgtacgctgggacaaacctttacgagaaatcttacagattggataaaaaacagtggtg
 ggtacagcgttttctctatctatgactgcctcaactgggtggcgcaaaaaatttacaacaa
 gttcaatttgggaacattcaggtatcacagaatcagcgtgtgtctaaagtacgctatgtagat
 gcaaaactggttaaggtatattatccgccttaaaacattgcaggtgaagttgacgggact
 gtaaatatagataaaacaaattgaacaaatttataaaatttaggttacagttatgtgggaca
 gatgcttataaagcacaacaaattatcacagaacagtcaggtacacctacacttaaattaact
 aactcaagccaaacggtgatttataaatcaaaagatgttcaaggtcctcaaattagtgtt
 gatagtcacaaactagagaagttggaagaccatttaaccaattacaattactacaactgac
 aatagtaagacgtatttaactacaactgtgacaggtctaccttcagggttatctttagat
 caaacgactaatacaattattggcagccgaagtgaagtaggaactacaactgtgacagtt
 aatactactgtatgctactgggaacgtaacatctaaagcaatttacaataacagattcaagat
 acaatcagccctgttgaatgtgacgccaagtcacagcatcagaggttttccagccgatt
 aabccaattacgataaactgtacagataatagtggaaggtggaacgacacagtaact
 ggattggcacaaggaacttaaatttgatgcatctacgaattcaattgttgggaactccaact
 caaatagggaacaaatacaatcacgattgagtcacaggtgaggtggaaataaaactacg
 actaaaatttaattatgaagtaacgagaaatagcgcaagtgactctacttccactagcata
 gtaaatagtggtttcaacaagataaagtaattagtcacgtcaagtgtagtgaagagcg
 agtcaatcatttatcaacaaaagaatcaacaagtaagagtcctcaggttctgttaagtgcg
 tcaacgtcgaaatagtgcatcaataaaagcgagtgaaatcagcaagcacaagtaagaagtt
 tcagaatcagcgagtagctcgatgtctgtagcgcatcaataaaagcgagcgaaatcagca
 agtacaagtaagaagttatcagaatcagcgagtagctcaacgtctgtagcgcatcaata
 aaagcaagcgaaatcagcaagtaagaagttatcagaatcagcgagtagctcgatg
 tctgtagcgtagtcaataaaagcgagcgaaatcagcgagtagcaagtaagaagttatcagaa
 tcagcgagtagctcgagctcgatagcgcatcaacccaagcgaagcagtagcaggaatcag
 agtaaaaggttatcagaatcaacgagtagctcgacttcagatagtgcatcaacatcaacg
 agtgagagtgactcaacaaagtgaaagtagactcgttaagtgactcgacaagtgaggtctt
 tcagaatcagcaagtagcatcaacatccgacagtgctccacatcaacgagtgagagtgac
 tcaaacagtagcaagtagctcattgagtgagtcgacaagcacaagtccttcagaatcaacg
 agtagctcaacatcagatagtgctcaacgtcagcaagtgtagtgactccaatagcgca
 acttagctcattaagagaatcagcaagtagcgtcttcagactcaacaagtagcatcgaca
 tctgacagtgctgctcaacatcaacgagcgagagcgactccgtagcgcaagtagcatcggtg
 agtggtctcatcaagtacaagcgtttcagattcaacaagcgctcaacatcagaagtgca
 tcaacgtcaacgagcatagtgactcaaacagtagcaagtagctcattaaagtgaaatcgaca
 agtagcaggtcttcagaatcaacgagtagctctacatccgacagtgcatccaacatcaatg
 agtgtaagcgactcaaatagtgccagcatatctttaaagtgagtcgacaagcacaagcgtt
 tcagattcaacaagtagcatcgacatcagaagtgcatcaacgtcaacaagcgagagtgac
 tccaatagcgcaagtagctcattaagtgagtcgacaagcacaagcgtttcagattcaaca
 agcacaatcgacatcagacagtgctgctcaacatcaacgagcgtaagtgattccaatagcgca
 agtagctcatttgagtgagtcgacaagcacaagcatctcagattcaacaagcagctcgaca
 tcagacagtgctgctcaacatcaacaagtgtagtgagtcgaagcagtagcaagtaagaagtt
 tcagaatcagcgagtagctcgatgtctgtagcgcatctgcatcaacgagtgaaatcaaac
 agtacaagtagctcattaaagtgctcgacaagtagcaggtcttcaggaatcaacgagtaga
 tgcacttcagaagtgctgctcaacatcaacgagcgtaagtgactccaatagcgcaagtagc
 tcattaagtgaaatcgacaagtagcaggtcttccagactcaacgagtagcatcgacatcagat
 agtagctctgcatcaacaagtgagagtgactcaaacagtagcaagcagacatccatgagtgaa
 tcattaagcacaagcgtttcagattcaacaagtagcgtcaacgtcagacagtagcatcaacg
 tcaacaagtgtagtgactccaatagcgcaagtagcgtcattaaagtgattcaacaagtaga
 agcatttcagactcaacgagtgctgacatcagatagtgctgagtagcagcaagcgag
 agtgaaatcaacaagtgaaagtagatcggttaagtgaaatcatcaagtagcaagcgtttcagat
 tcaacaagtagcatcgacatcagaagtgcatcaacgtcaacaagcgagagtgaaatcaaca
 agtgaaagtagatcggttaagtgaaatcatcaagtagcaagcgtttcagattcaacaagtaga
 tcgacatcagaagtgcatcaacgtcaacaagcgagagtgaaatcaacaagtgaaagtagc
 tcattaagtgagtagcatcaagtagcgtttcagattcaacaagtagcgtcaacgtcagaa
 agtgcatcaacgtcaacgagtgtagcgactcaaatagtagcaagtagcgtcattaaagtgaa
 tcgacaagtagcaggtcttcaaacatcaacaagtagcgtcaacatcagacagtagcgtcaacg
 tcaacgagtgtagcgactccaatagcgcaagtagcatcggttagtggtggtcattaaagcaca
 aacgtttcagattcaacaagcagatcgacatcagacagtgcttcaacgtcaacaagcgag
 agtgactcgacaagtagcagcagatcgtaagtgagtagcattaaagtagcaagcgtttcagac
 tcaacgagtagctcgacatcagacagtgctccacatccacatcagaagtgcatccaca
 tcaacgagtgtagtgagtagcagacagtgaaagtagcatccatgagtgtagtgactcgaa
 agtacaagtagcatcattgagtgactcgacaagtagcagcgtttcagactcaacaagaaca
 tcaacatcgatagtgcatctacatacaagagtgtaagtgagtagcacaacagcgccagtaga
 tcggttaagtggtcacaagtagcaagcatttcagattcatcaacgagtagcagcatcaatg
 agtagctgaaacttcaacttctcaatctctataaaatagtgaaagtgaaatttattgggt
 gatagcttgctgaagtagcaatcgtagctcaatcaaaaaatcagaatagcttaataaa
 actgggaaagatttagattacaagaacaaagaggttatactgattcagaacaacacaat
 gaaacacaaagtaatacaagtgataatcaactcaacaacctcgatttacttcatcaaaaat
 cgtttacaagaataaagtcgttaaaacacagcactaaaggagaagtaggagttgtagcaac
 ggttttatagtagcagtagcaatagtagttggctctcgtttggcgcaaaaaaatcaga

240.	atgaaaaaacaggttatcgcttctacattagcagtatcttttaggaattgcaggttacggt tctacaggacatgaagcacacgcttcagaaactacaaacggttgataaagcacacttagta gatttagcacacaataatcctgaagaattaaatgctaaccaggttcaagctgggtgcttac gatatcatttctgtagacaatggataccaatacaacttcaacttcaaatgggttctgaatgg tcatggagctacgctgtagctgggttcagatgctgattacacagaatcatcatcaaaccaa gaagttaagtgcacaatctagtaacacaaatgtacaagctgtttcagctccaact gcttcagaaagtcgttagctacagcacatcaactacttcaactcagcaccacagccataac tacagctctcagcagtagttcagtaagattatcaaatggtaatactcgtggttctgttaggt tcatatgctgctgctcaaatggctgcagctactgggtgattctgcttcaacatgggaacac atcatgtctagagaatcaaatgggtcaattacatgcacgtaagtgttcaggtgctgctgga ttattcacaactatgccaggttgggggttcaactgggttcagtaaatgtacaaatcaatgcc gcttataaagcatataaagcacaggtttatctgcttgggggtatgt
241.	atgaataaaaaataaagtgtattgtaattggatcaacaaatgtagataaaatttcttaatggt aaaagggttccaaaacccggtgagacattacatattatcaagctcaaaaggaggttgggt gggggcaaggagcccaatcaagccatagcagctagtagattagcagcagatacaacattt atcagtaaaagtgggtaaaagtggcaatgccaaactttatattggaagatttcaaaaagca gggtatccatacacaatatattttaacttcagaaagtgaagaaactgggcaagcatttatac actgttgatgaagcaggacaaaatacagattcttgggttacgggtggcgaaatagacatta agtgcactgattgtgagatgagtggtggtgcttattgggtgcagactttgtgttagcg cagcttgaagtccatttggggcagatagaacaagcatttaaaattgctcgtaaaaaaat atcactactgtattaaatctgcacggcaattgaattgcttaagtcacttttagagttta actgataataatttccaaacgaaacgggaagcagaattatttaacaggtatttcaatcaat aatgaagtgtatgaagaacacagcaacattttctcgatttaggtatattctgcagta ttaattacttttaggggagcagcagcgtattgtgcatacaagaacaatacaaaatgatt cctgctgttaattgaagaacatagatcagcagcagcagcagagatatactttatagggtgct tttttctggtgagttaaaataaagatttgagcaatttagaatcggtattcgacttgcaaat caagcgtcgtctctaacggtacaacgaaaaggagcacaagcttctataccaacacgttaaa gaagttagaggcagataataat
242.	atggctcttaaaaaataaagccaattacaatgggtcgctgtaatatgactacttttagat ttcgctgaaatcacaaaaacaacacctgaaaagtcattattacaacccgtaccgaaaaga gcgggacgcaataaccaaggttaaatgactgttcgccatcatgggtgggtggacacaaacgt caatcacggtgttatcgattttaaacgttaacaaagatggaattcattgctaaagtgtgattca atcaaatatgatacaaacggttcagcaaacattgcatgtgattttagctgtaggtgaa aaaagataatcatcgacacctaaggattacaagtaggtcaaacgtgcgaagtgggtgct gaggcagatatacaagtgtgtaattgctttaccattacaaaatattccagttgggacagta attcataacatcgagttaaaacctggtaaaaggtggacaacttgctcgttctgctggtgct agctctcaagttattaggtaaaaggttaaatatgtatttaatacagattaaagctgggtgaa gtacgtatgattttatctacatgtcgtgcaacaattgggtcaagttgggcaacttacaacat gaatttagtaaatgttggtaaaagcaggacgctctagatggaaaggcgttcgccaactgta cgtggttctgtaataacccataatgatcaccacacggtggtggtggaaggtcgtgctcca atcggtagaccatctccaatgtcaccatggggtaaacctacgcttggtaagaaaactcgt cgtggttaaaaaatctctcgacaaacttatcgttctggtggacgtaagaaaaaa
243.	atgaagtcaaaattcacaattctattatttacaatcttttctacaacagttattagttttg gttattattttatacaaaaactcaatcccaatcatatttctgactcactatttctaataat aaaataaaaaacaacagcaacactttttttacatgggttatgggtgtagcgaacgctcagaa acggtttatgggtcaaacagcgtttaataaaaaatgtaaccaatgaggtgataacgcgtaga gtgagtagtgaaggaaggtatattttgataaaaaatgaagtgaagatgcagcaaacccct attgtcaagtagaattttaagataataaaaaatggaaattttaaaagaaaatgcttattgg attaaagaagttctatcacaaactaaaaagtcatttggaaattcaacaatttaattttgta ggacattcaatggggaacatgtcatttgcctttttacatgaaaaattatggggacgacgca catttggcacaacttaaaaaggaagtttaataagcgggagtttataacgggattttgaaat atgaatgagaacggtgaatgaattatcgttgataaacaggggaaaccaaagtagaatgaat gccgcataatcggaatttggtatcactgcataagatttattgtggaaggaatagaagtt ttaaatatctacgggagatttagaagatgggtcacattcagatggagcgtgtgtcaaatagc tcttctcaatcgcttcaatatttactaagaggtagcactaagttcttatcaagaaatgaaa tttaaaagtgcaaggcacaacatagtcattacatgagaataaagatgttgcaaatgaa atcatacaattcttatgggaaact
244.	atgaagattggaattgatgccggagggtactttaattaaaattgtacaagagcatgacaat cgtagatattacagaactgaatttaacaactaatatccaaaagtcataagattgggttaac aatgaagaaatgaaacattaaagcttacaggtggaatgctggagtaatagcagatcaa attcatcattccctgaaatattttagaggttcgatgcattcatcaaaaggtttagaatt ttattggatgaacaggtcatcaaatgaacattacatttttgctaatgtaggtacaggt actctttccactattttgatggaaaagaccagcagcgtgttgagggtgtaggtaccgga ggcgggagatgatacaaggtttaggctatttattgtccaatataacagattataaagaatta acgaatttagctcaaaatggagatcgtgatgccattgatttaaaagttaaacatattttat aaagatactgaaccaccaattcctggagatttaacagcagcaaattttggaatgtatta catcacttagataatcagtttacatcagctaacaacttgccctcgtcaattggcgctggt ggtagagttataacaactatggctattacattagcagctgaatataagactaagcaggtt gtatataatcggttcatcatttaataacaatcaattactacgtgaagttgttgaaaattac actgttcttaagaggtttaaacctgtatatttagaagattggtgcttttccaggcgttta ggagcacttttaccct

245.

atgactttaataaccattttgcatatacatttgaggagagacctaccccaaaattatgg
ctttgtaaacagatggaactagaattgaaagaattgagatttttcaaaacttggtgga
acattcaaatccataatgtgaacactttacattttgatttgccattgcaagtatttagt
gaagatpactaagcaaatgaaagaataaagtagttgatttagtaaaaaataaactta
atgattatagataaacggatataagagatatctttgtaattgatgatataaaaaact
gctaattgactctgattttattacattaaatttagactcaagagcgtctgaattaaataag
aaagctgcaaatgaaattgaattattaggttctactatccctcaaatgatgaacaaatc
ttatcagtttatgctccactatggaacttggaacatgttgatggaataatttgatgtt
aaacgtgagtttaactggttctaatacaactgttaacgctcttattgataatattgttct
ctttttgacgcagttgctattttaacaacatttaatagaacaaataagcttctatcaaaa
gacaattggtgactaatcgtggtttaagagtttagggaaaaatagttatttaaaatcattt
gaagatcaattttgatcaaaaggatatcgttactagatttatatccatttggtcaaaagtgtt
ttaacaattcaaaagtgttaaccagctggctctcttatttgaagacttctcttatttc
atgtccaccattcaaacgtgataataacagaaatgtattacaacatagtgatttatgtct
gatgaattatgtcacgctttgttagatttatcaagagttttatgctagtaagaaggatcaa
gctggtgtaattatctaaacaatatagtgcaattcttaagagcattcacaagaagacttc
agattaaatcaatttaagtgctacacttcaacgactaaatgagcgtgttgtaattagtttaa
cctaatacagaatatattgacttaggaacaaagggttaagaatttcaaaatcactgtacct
aaatcatcatattatttaatcatgattagaaatgatggttagtttactagaattaaattc
aataataaacagtagtatattccaagtgtgagtggttgatatcaaaacttaaaactggt
aagtttaagtacgctactaagtttgagaacaaattagaataccctctgaaatattaaagt
gcaaacgctaatatttaagagtggttatatactcgttctctgaaggagattatgaagaaga
gatactaaagacaatcgaagaaaaatacaacttagaataataaaaatttagttaaagat
caagaaaaagtagtgcttcaatcgaagacgattaaaagcttttgaagaccaaagca
agtgtaatacgttcaatgaatgcaagaattttcttatcgaacaaactttaataatgaacgt
gagttatatgttttgagctgttttgacggaagaaaaatcatagacagcctcaagaatta
tatgatgacgctgtaaaacaaatgaaggaacaaagaaaaatcaatagaacgattacagtt
gatttagttaacttcatcattcgttgcacataaagatgattgggataaattaaatgtt
ggagataaagttgttttccaaaaacaaactctcaataactaaatcaaaagccttatcact
gaattgcaatttagattttccaaactaatcaagtaaaaattactattagtgatattttgat
tacaagaagtttagacacaatcatcgtgaaaaatttagccaaactaccttacttctct
caagttgatttccataaacaacaaattagagagcaaacgggaagaattacagatatgact
cgtcttatcgaaggtgagtgaggcgaataaaaaagcgtgtgagtggtgtaatagaaca
gttgatttggttcacatggtgtttaaagtcatttcaaaagagaacccctaacgaattcgt
atcatggttggttggtggttaattgctatgactcgtgataacggtgaaacattttaaactggt
attacaccagaaggtatcaatgctgaaatgcttatcggtaagatgatcgttggtgaaact
ttaacttttgaataatgagtcgtgacagttaaattcgaacaaagatggactttatgttaac
tctaaaaacttccatttagtttcaaatgatggagaagaagactacttcgataaattaaaa
cgtgaaatgtctgaaacgctaaacacaaacagacagaaatgttagaagagtaaaaaaa
gaagtttccaaactatttctgaagctactgacgttagaacaattgttgataatgacagca
gatatttctcaagcagcttttgcgtgaggttatcacagatgtgaaaaacgtttgatt
tctgaaactccttgcacttgaagaaagaaatagagaattcgaagataaaaatcaactta
gcttttaaacacaccttactcactgaggaagataactattgagttaaataattctatcgt
gaatatagctcaatgtatgaacacattgttatttctattaatgaaagtgttagtgacaag
atgatcacacctcaagagctgaagaataatcaaaaattataaaacttcagagaagag
atcaaaagacattctattagtagaagaataattgaacgaactaaaaatgctcaacta
caagctactttagaagaagcaaaagattatacaacaaagagttcgtgacgatttaaagat
gaattaaagacttaataaattcattttaaactctttaaattagtagagttgaagagctta
caagataaatttttgacgctgctgaattagaagctattaaaaacagttgtattagtaact
aaatcagaattatcaagataattacaataatagatatcttcaatgtctgcaaatacagatt
aaatcggaaagtaaattagatttaacaaactcttataaaactttagatactagctttaa
gactttgttaaatatattgacgaatgcaatggatagaattgcagatgagactgagaaa
gttaattcaaaaagaaatagatactttcaaaaagaactttacagattatgaaaaaaa
tatgataactgtattttggaataatctaaaaagatttcaatgacgcagcagataaagtg
ttaggtgacttccagctatttgcactgaattacaataagatttccaagatgttaagac
aattggtgcaattcaagcaaaactactcttgagtcatttaagatggtatagtaactgag
gcgaaaaagctcgactaagagtaacatttagatatgcttgatcgtgaaagcatggatt
gaagaacgataaaaaagcttacttgcataacaaatataactaatgatttaaaaatcgc
ttaactgcttcaagcttctcttacttactcagttcattgctagtttaagaaaagttaattgaa
caaatatttgcgcggaagttgatgaaagtgaacaaacattagctaaataattcactt
aatacatacaacacacatttaactgcttattctaaacaaattcaagaagctcctaataca
ttatcacaaatcatctctctgattgtagcaagtaaaaaagttgaagaattcaatgggtga
ataactacaatttcttcagacgttgatacaatcaagaacaaagagatggtgacgataatc
acttatattatagcgtgtacactacattatcaacgactccagctaaaagtggagcagact
aatgatttaaaagacttacaattaaagatatgtatttagacactaaatctggttatgca
tatactttcactaaatctggtactagttatttctggaaacacttactgaccaagtattt
gttagctcatgaaacaaagcaaaaaatgcacaaagacacagcggaataaacgttagagtt
ttgttaactcaacttattctcttattgatcaaggagatatgtgactcaaggttcacaa
ggagattttatgtctgtggaacttcgagagctactggctcattcgttaagttagcagctgg
gttaagagcagcaaatacactgacgatacagtagctaaacagcgacgaagatttagaa
gattataaagtcaaaatgactaaagacttcaagattttaaattgacggtgtatctactttt
aaaactgaagtggttaaagatttcaagatgggaattgtaactgaagctgagaaaaactga
ttacgtgttcaatttagatatcttagatagagaagttcaagatatcgaagaagatatatt
agtattctttaaagtcattatgcagatactcaagttaaaacttctatttctaacgcacgc
tctacttataataactctcttactaagtttaagaacactattcaaacctgtattgaagat
ggaaaaagtaacgcctactgagaaaaactactgctaatacaactttaaccgcataataaat
gctttaaagagttattcagctgtatccaagaagcattaaatgactgtgcaaaagtaatt
gctcaaaaagaagctactagtcagtaaatcaattcaatgaagttatcaaaaataataat
acaaattattactgatatctcaaaaacagttgatgggtgcaattgaaactttctattacagt
ggagtaacaaacttactaataatccccgcttcgtatttggaacactgctagtaaacgtgaa
gctcatttaggtgatttattatttagacactgctactggtgttgcattcgtttctttaa
aaaggaacaaacttccccacttactatttggctccaatttctgtcaaatatttacagac
gcattgaatagagcaaaaacagctcaagacacgcgcgagtggaagaaagaggttttgta
aaabacactgttccaccaacagacactggtgacatttggaagcaagagtagtggtgac
atcttagtttgtaaaacacctaaggtcaaaaggtggtatttactcaataaagcagctgggt
aaagctagtaagatacagagtagacagtagcaaacagtgctgttcaacaaataaatgaa
tacaacagcactaataatcttgatcgcagacctaagagaaaaacttagtgacttcgaa
aaaacagttgtaaatgcatttgacgataagtcatttagtatttccgagcttctatctatt
aaaggacaacttgccttacttaatacagaaaaagatagatttaactagacatacgaataat
ataatcagaataattcatttctgttggaagcaaaaaacttaaatattcactgcatattca
aatataaataactaagcttagtgatttaagtacaactatttaagtgcatttggtagaat
aaaattggtgacgtgaaagttaaatctgttaacttcaaaatttgaaattgataaagcttca
gttaattgaatatcaaatcgtcttttgataatgcttcaactcaattatttagagaactcgt

tcttcccaagctaaagatagattagatgaatggaaacgtacagaatttagtacagactca
gacggtattattgaaagagtagctgggtgctaaagtttgactcaaaatggactgatacttgg
agaaatacagtttaaccagctattcaacaagtgaagtaataaacatatggaagtgaaaac
ctattactttaatagcgaagtcgaagtgacggtgctaataaccagactcactctttata
agatactacctgacacgccccttagaaaacagggaaaacttatactttaaaagctagtgtt
ttaacaactgatgaaagacaaagtggacaaattagtggttatccatactcccctaaccga
gcaagagagacagtaaaattataaagacggtaaaattacttatacatttactgcacaaact
gaaagtacacaatttcttatttataaagacgtggctgggtcaatctgatgtagacttaaat
gtaacaatcgagaaggctattttagtcgaaggaaataaagttacaggggtgtctccagca
ccagaggagacttctctgctttacgagattataaactcgtatctctccagcagaaaaca
ttcacttgagaaaaacaaagaaaagatttctcaaattgctactaaatctgatgttgacgct
tcacttagtaaaagtagctacttatgaaactcaatataatgtttctagcgggaactaactat
caaatctctcttcaagaatacaatgggttcattctttaccgacaaactacacttatgaagtt
gtagctaaaaataactctttaagttcttaacaacgtagcaactgctatatctgtaagtaaaa
gggtcaacaatgggttatgaattgggtgaattagacaacatgtctaaaactgggtgctaac
ccttagatttggttttagacagtaaaaggtagaccttctatctctactttctcccctcaatct
actactcaagataatttcagttatttacactaaatatttaggtagtgcttcagcaatcaat
acaactaaatcattgattgagcaaaactgctagttctattgaattacaagttaagaaactt
actgctgagactgaatacaacaacatattattaaaattcagacttctctctgggtgggaa
gggtgggataaatgttgatcctcagtatagttatgttgataaaaaatacttttgggtacact
cttctgacgcaatcactaataaaaaataagaataataacagttaaaatgacatacaat
aaaaatacaaatacccttctgtattttctaattttatttctgttggaagggtcaagag
gtagctattgggtgaacatttaacactaacttggttatgcttatatcccttcttctctaaa
ggtaaattaactggtaacatatattgaattcgctgggttactatgaaaaagaccacaaaa
tcaaaacccaatgatttgctagacatgaaatattacctaagattttgaataataataatgg
ttcagaatgacagctagtagctattctcttactaactctgagggtaaaaaaatcaat
tatattagagcttgggtttagcttatgacggtaaaaatcaaaagcgtaaataatagtgctata
ttctattatgctgtacctcaattagagcgtggatcaaaaccaaccgagtggtcgttatca
agacttgacgtatttagcactgaacaattggcagctaaagattgccttaaaacccagagagt
gtggatattatcgcaagaaatattgatttcaatactgactcaatgaagatttataattct
aacggtacattaaacatttctggagatactttaacaattagtaacaacaatagttctaat
gaagtaattataaatccaaaagggttttacttataaaaaagatgggttagttaagtttaaa
aatggactagacacaaagcgttatagtgctcaagcttatgaaccacagtttagttcatgg
aataatattaaagctactgatcccgctgctaagagtaagtataattacattcgacataatt
gagccggggatgaatgggtattacactataaatactgggtttacaattttgcagtacaa
cacaacaactatttagaggttaataatacaaaaaatgcgagagttaacaggtatcacat
ctttacaacaaaaagggtatttaaaaaatacaaatgtctgcttcttctcgaggtaaaagtaag
ctttatataatattcaagacaaaaactggagatactacactccatcaagaaatagtttagt
tctagttcaatgggtatacccagataatacaattgacttacaggctaaattaggttatccg
cctaacaatttgcagacttttttgaattacaagctgggtatgcctatggagaaaaataat
tctattgatgggttctttagaattagacgtatggcaatgacagatacaccaaatgcccggag
gtt

246.	atgtataacgtgacacagcatgcgacttataaaacaaaaataaacgagaaactgctgta tcaatcgggtgacatgctcaaacggatcgctcaatttaattttgaatctactatggaagag ctcgatgctttatcacaaacttgccaacttaattgttaaaggacaaactcactcaaaataga gagcaatttgaccataaataattatgttggaaaaggaaaaatcgatgaaataaaatctttc atagaattccatgataatagatgtgtcgttaaccaacgatgaattaacgacggcacagctc aaaacgttaaatgataatttgggcataaaaatcatcgatagaacccaatttaatttagag aatctcgctgcttgcgagcgagaagtagagagggaaaagctacaagtagaacttgcacaactc gattatttgttaccagactacatggctcatggtaaagccctgtctcgtcttgggtgggc ataggaaacagaggccagggtgaacaaaaattagaattggatcgctcgccatattagaaca cgtatgaattgagattaaacatcaattaaaaacgggtcggtgatcatcggaagatataga aataaacgtgaacaaaaatcaagtttttcaaatcgcttttagtttgggtatacaaatgcagga aatctcgctcatgggtttaaattgttttagctaatgaggagacctatgaaaaaatattttgttt gcaacattagatcccaaacacgacaaatcaagtgaaatgaaggatttaatttaattatt tctgatacggtaggatttattcagaaattaccaacgacattgggtggctgcgtttaaatct acactagaagaagctaaagggtgcagacgtacttatgcatgtcgtcgatgcaagtcattcg gaaatccgctactcaaattgacactgtaaatcaaatatttaatttagatttagatggaccat attcccaagtagttatttttaataaaaaagacttatgtaacgaacagatggatgtacct gtatcctaaatctcgcatgtttttgtatcttagtcgtgatgaaaaatgataacaaaagggtg aaaaatttagtaattcaagaaataaaaaatagttctcagcccatcgaagaaattgttagat agtgcgtgatgcagatagattatattttcttaaacacacacgcttgttactgaattata tttgacgaacacacagcatcttatcgtatcaaggatttataaaatata
247.	atgatgatcatcgctcatgtttaatcttgagtatctgattgggtgcattccaagcgggtta atctatgggttaaatatttttttaaaaaagataaagacaatacggtagtggaataactgga gcaactaacagttttcgtgttcttggaagaccagctggatttatagttacgttttttagat attttcaagggtattttatcacgtctttttccactatgggtccagttcatgcggatgggt gtctataagcaccttctttacaaatgggtttaaattagtaggattgtttgcaatactcggtcac gtgatccaatatatactgaaatttaattggcggaagcagtagctaccagtgaggaggtt gtattagggtgcaatccattttacttcttatcttggcaattatcttttttagtgattta aaaattcttaaatattgtttctttatcaagtatcttgcagcaattagttgtgtgattgggt tcaatcatcattcatgattatattttacttgcgtgttagcggaattgtttcaatcatatta ataattcgacacaaatctaatatagttagaatttttaaggagaagaacctaaaaattaaa tggatg
248.	atgatgaatcatagtgaaagctttaaactgaacaagatttttcatttgcctcagagctttat gcttatgggtgaagagaagtagtaatttagtccaggttcacgttcaacacatttagcactt gttttcgaagcacatccaaatattaaaacatggattcaccctgatgagcgaagtgtgca ttttttgctttagggtcttattaaaggtagcgaaaaacctgtagcaattctttgtacatct ggaacagccgctgcgaactacacacccgctatagctgaaagtcaaattagtctgttgcct ctcgttgttttaacgagcgacagaccgcatgaactgcgcagtggtgggtgcacctcaagca atcaatcagggtaaatatgttttagtaattatgtgaactttcaatttgatttgccgattgct gatggaagtgaacatacaattgtatacaatttaattcaaatgcaaatgcaagtcaatat ttatatggaccacacaggagaccgattcattttaatttaccatttagagaaccactaaca ccagatttagatcgtgtcgatttatttaacatctgtaactaaaacgttacctcattatcag aaatcgatttccgttagatgatataaaagacatattacaagaaaaaatggtctcatcatt gtcggagatagcaacacacagctgttgatcaaatattaacgtattcaactatataatgat ctgccaatcttagcagatcccttagtcagcttctgtaaagagaacacatccatgttata accacttatgattttatgtatcgagcaggattaaatttagaagtagactatgtcatacgt gtaggtaagccagttatttctaaaaaattaaatcaatgggttgaaagaaacagatgcgtat caaatatttgtgcagaataatgatcaaattgatgtatttccgacacacacctcatatatct tatgagatttcagcaaatgattttttccgttcatttaattggaagaaccacttgttgaacga aaaaatgggttacagcaatggcaatcacttgaaacacacagcagcattgaaataagtgat tacttaaaagcatgcgacagatgaagcggcatatgtaggaggtttaaattcaaaaacttaca aaagaagatcattatttgttggaaatagtagccaattagagatgtcgataatttactg tttgatagtgaggcatctgtatacgtaatcgggggtgccaatggaatagacggagtagtt tcaactgcgctagggtatggcggcacataaagaatgtgacattgcttattgttgatttatct ttttatcatgacatgaacgggtttttaaattggccaaataaatgaacttcatatcaacatt gtattagtttaataacacaggaggaggtatcttttcatatttacctcaaaaacgatcggct acaaaaatttttagcgattatttggaaacacacagcgtttaaacttgaatatactgca ctgttatatgattttacatttaagcgttttgataatttgactgactttaaatactgtgaa ttatctaaaatgggttctcacatgtatgaagtataaccaatagagacgaaaaatttgcac caacacaaaaatttatcagaatttgagtgaattgtttaaattgacatta

249.	<p>atggcgaaaaaattcaattacaaattaccgtctatgggtgctttaacggtatttggcaca gcttttactgcacatcaagcaaatgctgctgaacacccacagaatcagctaatcataaa aatgtatttagatgatacaactgacctcaaacagcagaaaaagctaaaagcgaagtaca caatcaactacaaaatgtatctgggtacacaaacatatcaagacccctacccaagttcaacct aaacagacacacaaaagtgactacatatgatgcatttagatgaaatgagtactataat gaaatttctacaaatcaaaagcaacaatcttatcaacagatgatgcaatcaaaatcaa acgaattctgttacaaaaaatcaacaagaagaacaaatgattgacacagaagataaa acatccactgatatacaatcaattacaggagacacaaatctgtagcaaaagaaatgagaaa gatttaggagctaacgcaaatatgaacacacagaagaagatgactgcaagtcaacct tccgaaaatcaagcaattgaactcaactgcttctaatgataatgaaagccacaaaaa agtcagcaagtaacttctgaacaaaatgaaactgctacacctaaagtatacaatacaaac gcattctggttataatcttgcattacgatgatgaagcagatgtagctcaacagaccattta gagccttatctattaaacaatgtgaatgctacatctaaacaaactacttcatataaatat aaagaaccagctcaacgtgtacaaactaactgttaaaaaagaacggcactatcaatcaa cgactatagatacaaaagcaattcaccocatttagtgcaactgctcaaccgagaacagtt tattctgtatctagtcacaaaacatcatcattaccgaaatatacaccacaaaggttaattct tcaataaataactataatctgtaaaaagaatatgaaagcaccagaatgaaagaagtattat acgtcatatttccctaaatattggctatagaacgggtgtgggacgctcctgaaggtatcgtt gttcatgatactgcaaatgataactcaacaatcgatggcgagattgcttctgaacagct aatcacacaaatgcattcgtacacgcatttgttgatggcaatagaattatagaacagct ccgcagatctacttatcttgggtgacgggtccatattgaaatcaacgcttctcaatgtt gaaataatctccatcacatgattatgattcatttgacgcttcaatgaacaaactacgctgat tatgttgcaacgcaattgcaatattataatttaaaccctgtagcgctgaaaacgagtgga agagaacagcttggacacatgctgctatcttaacttcttaggaggtactgacacgct gacctcaccatatttaagaagtcacaattatagctatgcagaattatagacttaatt tatgaaaaatatttaattaaaacgaagcaagtagcaccttggggcacaacatctacaaaa ccgtcacacaccttctaaacatcaggaggaactaataaagttaactgtgtctgtaaat cgtggtgtgtctcaaataaacacacaaatattggcttatatacaactgtttagacagct aaaggtcataagactgatacgaagtacaaaaactctatccgttactaaaactgcaacatta ggaaataacaaatttctatttagtgaagactacaatagcgttaaaaaatcaggttgggtt aaacaaaggtgattgtgtttataacactgctaaggcaccagtaaaagtgaaatcaaacat aatgttaaagcaggggtcaacactttacacagttcttgggttacacaaaaaagttgct agcaagttatctggtactggaaatcaaacatttaaagcaactaaacagcaacaaatgtat aaagcaacgtatctttaggtacagtgaaatggtaaatctgggtggattagtaaatattac ttaactacagcatctaaacctagcaatccaactaaaccttcaacaaacacaaatataca gtgactaaacaaatagtggtgtgtctcaaatcaatgcaaaaaatagtggttatatactaca gtttatgacactaaaggaaagacacaaatcaaatccaacgtacattgtcagtgacgaaa gctggccacacttgggtataaaaaattctatcttgggtgattataactgggtacaaat tatgggtgggttaaaacagatgaggtcatttacaacacagctaaatcaccgttaaaaaatc aatcaaacatatacagctcaaacctgggtgttaaattacacacagctaccttggggcacat aatcaaggtgggtggaacagtttcaggttaaaggcgatcaaaacttttaaagcaactaaacaa caacaaattgataaagcaacatattctttaggtacagtgaaacggtaaatctggttggatt agtaaatattttaaactgcaacatcaaaagttcaagcttgttactcaatcaacacca gcacctaaacaagtaaaacatctacacaaactgtaaatcaaatgtctcaagtgaagct aataattctggaaataagagcatctgtatgataaaacagcgaaggtgggtacgaaatc gctaacctgacatttcttatcaataaaacacagctactcaaggttaataacacgtatgta cttcaagatggaaacagtaatactccattaggtgggttaaacatataatgagtgacaact caaaatattcggaacacaaactcagctctataggttaaatattcagtaaaacacacaaat ggctcatattctatgtctgggtactaaaacacaaatattagcaccttaatacgtata gctaactcaagcatttaagcttccaaagctgtttacgttggtaagatttatatctatc ggtacagtaacataacagacaggtgattgctgctaaaggatttaattccaaacagctact gagctcctcaatcaacacatatataactatacttgggttatcaataatagtaaaagtatttc tatatggatcccaacaaagcaaacggatattctttaaaccatattatgaacaaacttct acagctatttaagcaaaaaattataatggcgttaaatgggtactatgggtcaacttttagac ggtaaatatttggataaaaaatcaactgacttagttaaggaaaaaatataatgcatat actggaatgactttaataacacgcgataaatccaatctcgtcttaataataaaaccacaa gtacaaaatggagccttgaatggtaaatgctaattatagtcacaaataaaaatgctatg gtacaaaagcgttagctaatgattcacttcaaatatcaattctcagtttagatcaa ccacaactattgtcagcacaagctctcaataaattatataaaaggcaaggtgtagctgaa aaccaagcgctgctatttagccaagctgcagtgaaatgggtcctaataatgaaatttatctt atctcaactgctttagtagaaacaggttaattggaacttcacaacttgctaaaggtggagat gtttcaaaaggttaatttcacaactaaacaggtcacaaataccataatgcttggaaat gggtgcatttgacaataatgcactgttagatgggtatcaaatacgctaaaaatgctggatgg acttctgtcttaaaagcaattattgggtggcgttaaatcattggaattcatcagtgaaa cgaggacaaaatcagctataaaaaatcggtgggaatcctgcaaacctgggtacgcatcaa tatgcaactgataatattgggcaaatgtcaacgcacaagattataaacaattttatgat aaaattgggtgaagtcggtaagtacttgcgaatttccacacatacaaa</p>
250.	<p>gtggcatttgaatttagattacccgataatcggggaaggtatccacgaagtgaaattgtt aaatgggttattaaagccggcgatacaattgaagaagatgagttatagcagaagttcaa aatgataaaatctgtagtagaaatctcttccagtaagtggtactgttgaaagaggttta gtagatgaaggaacagtgccagtagtaggagatgtcatcgttaaaattgtagcacctgat gcagaagaatgcaatttaaaggtcatggcgatgtaggagattcagaagaagaagaaaa gaacaagaatcaccagtgcaagaagaagcttcatcaactcaatcacaagaaaagacagaa gtagatgaaagttaaactgttaaagcgatgcccgtcagtgcgtaagtatgcagtgaaaaa gggtgcaattataagcgtgtaaatgggtctggttaaaaatggagcgaatcacaagaagac atcgatgcatacttaaatgttggtagtccgaagaaggttcaaacactagcgcagcatct gaatcaacttctagtgatgtcgtaaatgcttctgcaacacacagcattaccagaaggcgac tccctgaaactacagaaaaatacctgcaatgcgcaaaagcaattgtcaagcaatgggt aatctcaaacacactgcacctcatgttacattaatggatgaaattgagtgcaagaatta tgggatcaccgtaagaatttaaagaattgctgctgaacaaggtcaaaaacttactttc ttaccatttgtttaaagcatttagtttctgcaactaaaaatatccagcacttaatact tcttcaatgaagaagctggagaggtgtacacaaacattactggaatttggattgtct gcagatagggataaaggattatttagtaccagtagttaaacatgccgatcgtaaatcaata tcgaatttctgtgaaatttaagtaactagctgtaaaagcagtgatggtaaatcaact tcagaagaattgaaaggtgcaacatgcacaaattagtaatatcggttccgctgggtgacaa tgggttccactccagttatcaatcaccagaagtagctatcttaggaattggccgtatcgct caaaaactctgttaaagatggagaaattgtagctgaccaggttagctttatcatata agctttgaccatagacaaatcgatgggtgctactggacaaaatgctatgaatcacattaaa cgcttattaaataatccagaattattatttaattggggggg</p>

251.	<p>atgaaatgaaacagacgaaatttcacaaatctataacaagcatcgattaccaagttaaagt ggctctagcaaaagtgtctccacttggttcatagggccagcatagggagcggttttaaagtgtg gcagaattaaacagaattaaacgccttagttcaagtgcaaaatcaatttaaacaattttac aatcaaatgctagaagaagatgaagaggttaagtatcctatactgcgatgataaaatgaat catctaccgatcttacagatttatttaaagaaatgaatgaacatgtgatgcacacgat tattttgaccatgcaagttatactttacaaagtattagaagtaaaatctcaagaaacaaac caacgaattcgtcaaaatttagatagaatagtgaaaatcaagggaaatcaaaaaaaacta ctgtatgcaattgtaacagtaagaatgatcgcaatgttattccggtgaaagctgaatat agacaagatttcaatgggtattgttcagatcaatcggcatcaggacaacactatattt gaaccgaatttctgtttagagatgaataatcaaatcagtcggttgcgtaatgatgaagca gttgaacgtgaaacgtatattgactgaattgacgggatttgtttcggcggaagctgacgca tctactatgtgtaacgttattgggttcaaattgattttttaaattgctaaagctcggtat cgcgccactataaaagggaacaaacctacatttaaaggagatcgactatataatttacct aatgcatttcacctttattagacaaagatactgtttagcaaatcaaatgaatttatt gacgatgtagaacagtcataattactggaccaaacacgggtggtgaagcgggtacttta aaaacactaggatttgataattgtcatggcacaatcaggattgttaattcctacactggat ggaagtcgaattgaatttgaataatgtatattgtgatattggagatgaacaaatctata gacaatcattatcaacattttcatctcacatgaaaaatatagtagaataattacaagat cgagatcaaaatagtcctatttatttgatgaactaggcgaggtacagatccaagtga gggtggcgactcgcaatgagatcttagattatgtacgcccgtttagggctcttagttatg gcaacaacacattaccctgaattaaaagcttagttataatcgtgaaggtgtcatgaat gcaagcgttggaatttgaacactgagcccgacttataaattataatgggtgtt ccaggagatctaatgcctttgatataatcgaaaaactttggctcaagcttcaacatcatt aataaagctaaagcaatgtagggacagacgagcaagagatcaatgccatgattgaatca tagaacaacaaatcaaaacgtgttgatcaacacgtatagaatttagatcgactgttgagg gaagcacagcaaaacccagatgcttggcttaacaaataccaacagatcaaaattatgag acatcatttgatggatgaagctaaagaaaaagctaatcagcgtgtgaattctgcgactaaa gaagcggagcaaaattcttaagaacttagaataatcaagagatcataagggcgctgaggta aaagaacatgaatttaattgataaaaaagaacaaacttgatgatcaaatagggtaaaatca attagcaacatgttcaaaagaaaaagtagatcagattcactctggagatgaagtga gttctatcttaccgttcaaaaggtgaagtgcttgaactttaggtgacgaagaagcaggt gtcaaatgggaatcattaaatgaattacatttagaagatttagaanaaacgaaaaag aaaaagaaaaaacctacaaaaatggttaacaagacaaaatagacaaactattaaacagaa ctagatttaagaggatctcgttacgaagaagctttaaattgaattagatcaatctctgat caggcggttttaagcaattacgaacaagtttatatttcatggttaaggtacgggggca cttcaaaaggtgttcaacaacatttgaaaaaacataaaagcgttagacaaatttagggga ggtatgcctagtggaaggtggatttgggtgtcactgtggcagaactcaag</p>
252.	<p>atgagtttttttaacgctctgaaagataaatttcttagtaaaaaatgaagatgatattcaa aaagaccctggatgaattctgtatattcaaatgttaacagtgattcagattcaattggatcgg aatgatctctgatgaacaggttaaaccccaaaagaaacctaaaaaattaaagtgaagctgat tttgacgaagatggcttgatctgatcgaattgaagattttgaagaaatagaagctcaaaaaat ggagcaaaattcaagggcgggtttggaaaaatcacgtcaaaactccaagaacagttaaat aatttaattgtctcgatagaaaaagttgacgaagatttcttgaagctctggaagaaatg cttattactcgggagcttgggttttaatactgttatgaaatcaattgatgagctacgtaca gaagcacaaagacgtatatacaagaaacagaagacttaagagaggtttagttgagaag tttgagaaatctatcatcaagaggacgatcattctgaagcaatgaatttgaagatgga cggttaaatgtctactgatgggttgggtggaatgggtgcggcaaaacaacaacattgggt aaattagcttatcgttatcaacaagaaggttaaaaaagtaattgtagctgctggtgatact tttagagctggagcaattcaacaattaaacgtctggggagaaacgtgttggcgttgaagtt gtgagtcaaaacgaaggttctgacctgcagcagtagtatatgatgcgatttaattgcagca aaaaataaagacgtagatattttaaatttgtagactgcaggacgcttgcaaaataaaatct aattttaattcaagagtttagataaaatgaacgtgtgatttaattcgagcaatcactgatgcc ccccatgaagcttatttatgcttagatgcaacaactgggtcaaaatgcactttcacaagca cggttaatttaaggaagttacaaatgtctcaggtatagttttaaactaaattagacgggtact gctaaggggggtattgtattagcaattcgaaatgagttacacattccagttaaatattgtt gggttaggtgaaaaaattggatgacttacaacgggttagtctgaaagctatgtatatgga ttatttgctgatagtagaacaacaaatgaagatattcctgaagaaatctctagaatttca tcggttgaattcgaagaaggttaac</p>
253.	<p>atgaaaagaaattggtggaagaagcagttgcatatcaagttatccacgaagttttaat gatagtaattggagatggaatagggtgactcactggatttaattgaaaaattagattatcta gaaaatttaggaatagatgtcatttgggttaagcccaatgtatccatcaccaaacgatgat aatggatagatattagtactacaagggcatttagtgatgaatttgggtacaatgaacgat tttgatcaattgttatcaagcatacatcaaaagggatgaaatataatttagacttagtg gttaatcacacatcagatgaacaccttgggttattgaaatcaaaatctagtaaaacaaat gcaaaaagagattgggtatttgggcagatcctaaacggatggatctgaacctaaataac tgggaaagtatctttaatgggtcaacttgggagttgacgaatcgactaagcaataactat ttccatttatttagcaaaaagcagccagattttaaattgggaaaaatccagatgtaagacaa gctgtgttgaatgatgaattgggtgttgaaaaagggtattgacggatttagagttgat gccattactcatattaaaaagaatttgaagcaggagatttacctgtacctgatggcaaaa aaatttgcctccagcatttgatgtagatagaaatcagccaggaatacaagaattggctccaa gaaatgaaagataaattcgttaagtcggtatgacatttagactgtaggcgaggctaatgggt gttactcctaatgtagctgaagaatgggtaggagaagaaattgggaaatttaatatgata ttccagtttgaacatttgggttattggagacttggcgatacgaattcaggtttaaattcc tataaaacagctttaaattcgttggcaaaagcaactagaaaaatgtaggttggaaatgcttta tttatcgaaaacatgatcaaccacgtcggtgttcaacctgggggtgatgataaaattat tggttagaatcagcaactagtcacgctactgcctactttttacaacagggcacacctttt atttacaaggtcaagaattaggatagactaattatccatttgaagcattgaaagtttc aacgatgtcgagtgaaaactgaaatcaaatagtcaaaaaagaaggtggagatgtcaat caattactagataaaataaaaaatggaaaacggagacaaatgcaaggactccaatgcaatgg aataattctatcaatgctggattcactactggtaagccatgggttctatgtaaacctaac tatacagaatttaattgtaacaacaactaaatgataagtttctogatacttcttattat aaagcgtttaaattcaactaaaaaaatctgattttagtttacacctacggtaagtttaattg gtcgatgtgtaaaaatagcaggttttgcataacacgcacatttaaaaacaactactgta ttaattgtagcgaatctcaaaatgaagtatcagaactaaacctaccttttgaatttagat atttcatctgtagataaaaaatgcataatttactttaaattgataaaatttagacctat attaaaccttatgaatcattcgtcggttgaata</p>

254.	ttgagtcacatagaagctatttctcttatattccatttatatcaacaagacaatttagat gaacatatgtctatttggtagtaggacgtcgcgattataataacgaacaatttcgagac caagttaaagcgtcaattcaaaacttatgttaaagatcacagatagaatttgatgagtttatg acgcatgttttttatcataaaactgacgtgagtgataaagaagttatcagtcattactt caatttagtgagcgactagattcagaatttgctttaggtgggaatcgctcgtttactta cgcatggcaccacaatttttggagtgatctcagattaccttaaatctctcgtgcttact caactacaggattttaaagcgttagttatagagaaccatttggcagtgatcttaaatct gctgaatcattaaataatcaaaataagacgttctggttaaagaagaagaatttatcgagata gatcactatcttggcaagataggtagcaaaatataagaagtttggcatttcgcaaacgag atgtttgaacctttatggataataataacatttcaaatattcaagttacatcatcagaa gtattaggtgtcgaaagatcggtggtggtactatgaatctagtggtgacttaagacatg gtacaaaatcacatgctacagatgggttgccttacttgcaatggaagcaccgataagtttg aatagtgaaagataacgtgcagaaaagtcgaagtacttaaatctcttagacaattaaaa ccagaagaagttaaaaagaatttcgtgctggttcaatgatcaaggcaatatagatggt aaacaggttaagtcataatcgagaagaagatcgcgtagcaaggattcggttacaccgaca tttgatctgggttaaatcaacaattgataacttttagatgggtcgagttcccttctacatt agaacgggttaaacgtatgaaatcaaaaacgatacaagtcgttagtaatttaaagaagta cctatgaatttatattatgaactgacaatttactagattctaatttgctagtcattaat attcaaccaaataaggaatttcatgtcatttaaatgctaaaaagaacattcaaggaaatt gatactgagccagtgcaattatcatacgcaatgagtgctcaagataaaaatgaatacagtt gatgcataatgaaaacttatgtttgatgtcttaaagtgatgcgactaatttacacat tgggaagaataataatctacttggaaatttgtagatgcaatcaagatcaatggacaatg gttgaaacatgtttcccttaactatgaagcgggtacgaatggaccctctgaaagtgatctt ttattaagtcgtgtaggaaatcattgggtgggatgataccac
255.	atgattaaaaaaacaaagaagaactgaatgacatggagttatctagtactcaagaaat ggtagtgaacctccgtttcaaaacgagttatggaaactcttggaaaaggaaattacggt gataaatgttcgggcaaacctatttacttcagaggataaaattgaatcattatgggt tggccaagtttctccaaagcatataatgatgatgaatcgtagaacttggtgataaatca tttggtagatttagaactgaagttcgatcagaaaaagcaaatagtcacttggggcagtt tttaatgacggacctaaagaaaaggtggtttgaagatactgtataaactcgtcgcgatt cagtttataccttatgataaactagaagagttaggatatggagatttaattaaacatttt aaaaaat
256.	ttgaaaaagttagcctttgcaattacagccgcttcaggcgcagcagcagttctatcacat catgatgctgaagcttctacacaacataagggttcaatctgggaattcttatggactatt gcacaacaatacaatacttcagtagaaaagcattaaagcagaataataatcttagcaacaat atggtatttcccaggacaagttattaatgtaggtgggaagtgcttcacaaaaactagttca aacacttctcaggttcagcatcttcacatactgtagtagcaggtgaatcattaaacatc atagctaaataaatatgggtgttccagttgatgcaattatgcaagcaaatcatctaaatgggt tatttaattatgcttaaccaaataataactatccctaatgggtggttgggttcaggatca gggtggtacagcaactcaaaactagcggtaattatacttccacttcatccaacctcaaaac tatacactgaaggtcaatgcacatgggtatgtgttcgacaaaacgttcacaagcgtggttaa cctatcagttacttactggtctgatgcaaaacttggtggtcgaatgcagcgaatgatggt tatcaagttgataaactccatctgttgggtgcaattatgcaaaagtcacactggaccat ggctgatcagatcagttgaacgtatttaattggtgatggtagtattttaatttcagaaatg aattatgcaaatgggtccatatacaatgaactatcgtactatcccagcttcagaagtatct tcataatgcatttatccactaa
257.	atggcagctattgctacaaaatttgggtatcctgaaagcaatagtttcgtgactaatact gtaattgaatttgttttacataacgaagcatatcctcggttatataggattaaaactcga gaacgaacttaataaaaatttctcaagctaatgaaatctcagctcaaatcaaaaatggc acgtagcagcttgaagaagctaaagtataatagaggaaatatatgttgctaaagagat agcagctacccctcaaaaggaatttgcgcagcaattatcgctacgagcttctctatcta caggggaggtcgtcgttgatatacatcagcgtgtattagctggaacgattggatactta gtagtagaaatattagatcgaagctacacgcacaaatttattccagaatttataggttct ttggttaataggtatttattctgtaattggacatgcatttggtcctagcggagatttagct acaattatcatgtcccggtcatgacctatgtacctggagtagcttatcaaaaatgctatt caagatttatccggagacatatgttaattgtttacaacaaaatctttagaagcttttagtt actgcctttgggtataggcgtggtgtaagttcaattattaatttttagtc
258.	atgcagaatttgacttatccactagagaggtcggttggaaacatttcggttctgttgac cctgtcaaaaggtacgaacccaactactaaaaatgaaatgaccgatttacaagcaactcac aaaaatttcttatttgaaatagaggagtaggcattaaaaatttaacttatccagtttta attgatcatcatcaaacagctggtttattttagtttttcaacgagtttaataaaaaatgaa aaaggcattataatagatcgcatattagaagcgttgaaaaacattatgataatggcatt gaacttgaatttaacacactacatcaattgttgcgtacgctacaagataagatgaatcaa aatgctgcaggtgttgatgtgctcaggttaattgggtctttagctggttatgctcgtttaca catattaaagctgtaggctatgcagatgttacttatggttttagctattgaaaatcatacc gttacagctaaagaatttaactattcaagccaaagtacaacactatgctccttgcctcaaaa gaaatttagtaattatctgcacataatcaacgtggtatcggtacagttaaagcatattta gataaaaaatgaagctcatcgatgattataaaaaataaaattttagacgctatggaagcc aacgctagttctatcttatataccaatcttaaaacgctcctgatgaaaaacgagtaacagaa cgtgcttatgaaaacccagcatttggtagaatttaattcgactaatgagcagactta gttgaaatttgattggattgaaggttcgatattgaatgtcgtaatgaagagtcataccac cagcatgatgcttctgcagctctgaaatatcgcaaa
259.	gtgcaaaaaaataatattactgccattattggaacaaactgccccttagcgcattggcatca actcatgcacaagctgcaaacacgcatacagtaaaaagtgagaaatctgtatggtcaatt tctcacaaatattgggatttagtatgtcaaattaaaatcacttaattggattgacttcaat ttatatctccataacagttatgaaagtatcaggtcatcttcaagagcaacgtcaaca aatagtgccacagtttatacagttaaagctggagattcattatctctatgtcgaaaa tacggtacaaacttatcaaaaaatcatgcaacttaattgggttaaaataactatcttatttc cctggacaaaagttgaagtttctggttaaagcgacgagttccagtcgtgcaaaagctagt gggtctagtggtgctactgcaacataactgttaagtaggagactcactatctgcaatt gctagttaaatattgggacaacgtatcaaaaaattatgcaatttaattggattcaattttc ttatctatcctggacagaagttaaaagtgcctggaggttagttctagtagctcatctct aataaactagatcaaacgggtggctattattcaccaacttttaacctcaaaacttgat acttggggcaaatgcacatggcagctatttaatagacgtgctgaaataggaagaaggtatc agtatactggtggaatgcaataattgggacaatgcatcagctgctgatgataact attgattatcgtcctacagtaggctcaattgcacaaactgacgctggttactatggtcac gtagcgttctgtagagcgcgtgaatagcagtggaagtattttagtttcagaaaatgaactgg agtgcagctcctggaaatgatgacatagaacaattccagcttatcaagtgaagaattac aaatttattcatt

260.	gtgacacaaaaagctttttatttcttattctagaacaagtgatgaacatttaaatagagtt gtgagaataggagaaaagtttgagagtttgatcatggaattgatgttttttagatgtagg gattgacctgagggagatgacttgaattttttttaggagtcattggttaatgacgagacg atagattttttgtttatttataagcgattttcagtttttaatatagagctaatgatagagaa ggaggagttggaagaaagcacaataattacttctcaaatttatgataagcaaaaagat agtaagtttatacctgtctttttagatatcttggaataatggaaccatcattaccaact ttttgttaactagattcgctattgatatgacagacatcgaaattagatatagagaaaaata gaagagattgcaagaaaaatacacgataaaccttttctgaaaaaccaaagacttggtaaa gtaccagattataaccaaatacaaatgagtttaagaaagcaataaaaaaataacttta tctaaaagtataatgaacgagaaatttgaagaagcttttagacattattataaaaact ttagaaaaatatagaaaatagcgttagaggaaataataaagatgatttaatgactttaaaa gaggtttttgatacttggaagaattttatcagtatgcgttaaacatgataacttttat tttagggaatttaatatagagcattataataggtgtctaaagcttacggaagaagaattt gaaaaaccaaagctaggatttttaattatttttctattttctatactagtaagtgaattct ttatcttcaggagcaaatgaatttttgaagattttatgaatgctaaatttcattttagt agaagagaagcaaatattatataatgaatttatatccccaggtgttatccaagaaatat tcatataactaatagtcaaaaaaatgttagcgaatgtactttgaagggaaggagttta aaaaaggttcagatgcagatgtaattttatatacagaagctttatgaaaaaagatatt catagtgtatatgaaacgtggcatgggttctgtgtatagtagatggcctatgcttgag caacaaactattatatttttaataaataaatttcgtagtaaaaaatatctagatcaatttt gactttttatttggagtttcacaaagagaattttgaaaactatgataagattaaatcc acacagaataacacctatttttaattttattgataaagaagaatttggcagctat
261.	atgcactatctaaagaaagtaactatatacataagtttattatttttggtagtggtgtg ggagacagcaaaagaaacggaatacaacaaaaactttaataaaatgttaaatgtgtatcca actaaaaatctagaagacttttatgataaagagggttatcgtgatgaagagtttgataag gatgacaaaggaacatggattattagatctgaatgacaaaacagccaaaaggtaagatt atgacttcaaaaaggtaggtgttacatatgaatgaataactagaagtaaacctggttat tacgtttattaggaanaattttcgaagataataaaagtgaattgatgatgaagaaaaagaa tatcctataaagatggtaaaatacaagaataattccaactcaaaaaattaatgacataaaa ttgaagaatgaaatagaaaactttaagttctttgtcaataacggaagctttaaaattca gatgatataaagaagggtatattgaatacaatcctaagtcaccaaatattctgcacaa tatcatttaagtaattgatgactataattatacaaatgaagaaaaagatatgatataaa acgaaaaaaactcctagattataatgagagggcgtggagatccaaaaggatcttctgta ggttataaaaaatctgaattttacattttgttaagaataatgagggaataattttatttacc gatagtatttaatttttaacgaaggaagggttaattcatg
262.	gtgaacacattcgaaaaagttacttttatgcatcagtttttttataataacgttttttatt gggtgtagtggttttatgaataaagacgatggtaagaaacggaaatcaacaaaaacttt aataaaaatgttaaacgtgtatccactaaaaatctagaanaacttttatgataaagagggc tatcgagatgaagagtttgataaggatgacaaaggaacatggatagtttcatcttaaaatg gttatgaaacaaaaggcaaaaacatggaatctagagggtgggttctctttatcaatcgc aatactagaacatcaaaaggctattttatagtcgaatgaatagaaaaggatagaaaagga agacccatttaataataaaaaagaaatatcctgtaaaaatgaaaaataataaaattattcca acaaaccaaatactaatgataaattaaaaaaagaaattgaaaactttaaatttttgta caatatggcaatttttaagatatataaaattataaagatgggtgacatttcatacaatcct aatgtacctagttattctgcaaaatatcaattgagtaataatgaatataacgtacaacaa ttaagaaaaagatatgacatcccaactaaaaaagtacctaactattgttgaaagggtgat ggggatttaaaagggtcatccgtagggttcaaaaatctagaattttacttttatagaaaat aaagaagagaatatctattttacagattctgtactatttagccctagcggaggaataatgaa tca
263.	atgcgttatctcaagaaagtaacgatatacataagttttattatttttggtaagtgggtgt ggaaacggttaagaaacggnaatcaacaaaaactttaataaaatgttagacatgtatccg actaaaaatctagaagacttttatgataaagaggctatcgagatgaagagtttgataaaa aaggataaaggagatggatagttggatctaccatgacaattgaaccaaaggcaagtac atggaatctagaggtagttttctatatataatcgcaataactagaacaaactaaagggttat tattatgtgaggaaaacacagatgacagtaaggtagactaaaagatgatgaaaagaga tatcctgtataaaaatggaacacataaaattattccaacgaagccaatacctaagacaaa ctaaaaaagaaatagaaaacttcaaatttttgtacaatatggagattttaaaaacttta aaggattataaagatggtagactttcatacaatcctaagtgacctagttattctgcacaaa tatcaattgagtaataatgactataatgttaaaacaaattacgaaaaagatatgatattccc accaaccaagccctaaattattgttaaaaggagatgggtgacttaaaaggctcatctata ggttccaaaagtttagaattttacttttatagaaaataagaagagaatactttttttcca gatggtgtacaattttactcttagcggagtagtgagta
264.	atgaacacattcaagcaaaaataatagattttgttaagttcttatttttaacgatttttatt ggaggatgtggtttttataataaagaagatagcaagaagctgaaatcaacaaaaacttt aataaaaactgtaagtatttcaactaaaaatctagaagacttttatgataaagagggc tatcgtgatgaagagtttgacaaagatgacaaaggacatggattatttaattctaaaatg attgttgaaacgaaagggaagagatggaagcaagagggtggtttcagtatataataga aatacagaaacagctaaaggtaactttattataaaacgaataacagaaaaataataaagga atacctgatgttaagacaaaaaatatccagttaaaaatggaacacataaaattattcca acaaaaacaaattaaagataaaaaatataaaaaagaaattgagaacttcaaatttttgta caatatggaaatttttaaaaacttaaggattataaagacggagagatatcttacaatcct aatgtgccaagtctcagcgcaatatcaattgaacaaattatgataaataatgttaaacaa ctaagaaaaagatatgatattcccacgaatcaagctcctaattattattgaaagggtaca ggagatttaaaaggatcctctgtagggtataaacatcttgaattttacttttgtagaaaat aaaaaggaaaatttttttttactgacagtataaaactttaaccgagtagggggaat
265.	atgcgttatctcaagaaagtaactatatacataagttttattatttttaacgatttttatt ggaggatgtggtttttataataaagaagatagcaagaacggaaatcaacaaaaacttt ataaagatgtttaacgtgtatcctactaaaaatctagaagacttttatgataaagaagggt tttcgagatgaagaatttgataaaggagataaaggaaacttggattattagggtctgaaatg acaaaacagccaaaagggtaaaattatgacctcaagagggtatgggtctctatatcaatcgt aacactagaaacgcaaaagggtattttttaaagatgagataaaagatgataatagtggt agaccgatagagaatgaaaagaataacccgttaaaaaagaaacataaagatctttcca acaaagcaaatctcgatgataaattaaaaaaagaaattgaaaacttcaaatttttgtga caatatgggaatttttaaaaacttaaggattataaagacggagagatatcttacaatcct aatgtgccaagtctcagcgcaatatcaattgaacaaattatgataaataatgttaaacaa ctaagaaaaagatatgatattcccacgaatcaagctcctaattattattgaaagggtaca ggagatttaaaaggatcctctgtagggtataaacatcttgaattttacttttgtagaaaat aaaaaggaaaatttttttttactgacagtataaaactttaaccgagtagggggaat
265.	atgcgttatctcaagaaagtaactatatacataagttttattatttttaacgatttttatt ggaggatgtggtttttataataaagaagatagcaagaacggaaatcaacaaaaacttt ataaagatgtttaacgtgtatcctactaaaaatctagaagacttttatgataaagaagggt tttcgagatgaagaatttgataaaggagataaaggaaacttggattattagggtctgaaatg acaaaacagccaaaagggtaaaattatgacctcaagagggtatgggtctctatatcaatcgt aacactagaaacgcaaaagggtattttttaaagatgagataaaagatgataatagtggt agaccgatagagaatgaaaagaataacccgttaaaaaagaaacataaagatctttcca acaaagcaaatctcgatgataaattaaaaaaagaaattgaaaacttcaaatttttgtga caatatgggaatttttaaaaacttaaggattataaagacggagagatatcttacaatcct aatgtgccaagtctcagcgcaatatcaattgaacaaattatgataaataatgttaaacaa acagttctcagttactcagcgcaatatcaattgaacaaataatgataaataatgttaaacaa ttaagaaaaagatatgatattccaaccaatcaagcccataattattgttaaaagggtgat ggcgacttaaaaggatcatctgtagggtcttaaaaatttagaattttacttttgtagaaaat aaagaagagaatatattttttacagatgcgtacaaattcactcctagcggagtagtgaa tca

266.	<p>atgaagacctataagcgtaccgacatcaattaaaggcgttcgctatttgccctcaacgatt tccccagatttattgggtgatgattattgggttaataagcttttatgctatttatatatgg gtcgaaacatcgaccattcatcagcataccatcaaaactcaaacgcaattacaacgtatc gacaaacatttctacgtttgttacgcagcaacaaaaaattggcgctcatgttgattta tcacatccaactgatcacaaagatgaacgcgaactatataaacgaagtcacacaa cctgcgatttattgattacgatttaaaagggttcttcacaatctttcacaaacattatgaa caattagacacacaaagatgtatttaatatcaaaatcgaattgattttaaagacgat acttatatccttaaaatatatatgtcaagcacaccactacttaaaacattaaagaaaaat agtggaacattctgcactcattgttgattcatatgatactgttttatatacaaatgacgac cgattctctatcggtcaaaaatcaaccaccacagtttgggtttatgaacgagtcctta aaactcaattctcatcatgcgcatcttattatatataaagatatcatgaaccattgaa gatggaattcctactagttgtcatgggtgtgttcttattctgctgttatttttga tatataagcgtgatagaaatggcaagcgcaactcgaagatatgaagcgattgtccga aaaattgatgatgtcaaaatcgacatcttggtagtacgaacggttaaaaaacatagt gagttagaggaataaaataatttatctatgacttgtttgaatcaaatgagcaatataa caatctattgaacagacgaacgtcggttacggtgatatacaattaaagaaattgagcga caatttcaaccccatcttcttcaatcagatgcaaacgatacaattttaaattctctt tcaccaaaagtagcacaaacagtcatacaaaactatcacaaatgctacgttattctcta cgcacagcatcgacacagtcacaaattagcagaagaattagctacattcagcagttgtt gctatacaaaatattcgtctcgatgatgatgacagctttacatcgatgctcctgaagat gtacaacatcaaaatattggaagatgatgcttcaaccactcgtagaaaaatgccatcaag catggtcggtgtgtgaacctttaaagatacaaatcgatcagacttacgaagcgcaaa ttacatttctggttcatgataatggcatcggtatgtctccatcacatttagaacggtg cgccaaactcctcatcagcatgttttgatacgcacacactagggttaaattcatttcat aatagagccatcattcaatatggaacatatgcagctctgcacatttctcaagaagccat caaggacatttaattgtgttaccaaataccacttgtc</p>
267.	<p>gtggatgatgtgacaaaatatgggtccagtttgatggagatccgattacgtcaacggaagaa attccgttttgataaaaaacgcgaatttgatccaaacttagcgccaggtagacagagaagtc gttcaaaaagggtgaaccagggaacaaaaaattacaacacccaactaagaacccatta acaggagaaaaagttggcgaaagtgaaaccaacagaaaaataacaaaaacacagtggtat gagatcggttattatgggtggcgaagaaatcaagacaggccataaggatgaatttgatccg aacgcacccgaaggtagtcaaaacacgcgaaccaggttaagccaggagttaaaaatcctgat acaggcgaagtagtcacaccacagtggtgatgtgacaaaaatattggtccagttgatgga gatccgattacgtcaacggaagaaattccgttttgataaaaaacgcgaatttgatccaaac ttagcgccaggtagacagagaagtcgttcaaaaagggtgaaccagggaacaaaaaattaca acgccaacaaactaagaacccattacacggggaaaaagttggtgaagtgaaacacagaa aaaatacaaaaaacacagtggtgatgagatcggttattatggtggcgaagaaatcaagcca ggccataaggatgaatttgatccaaacgcacccgaaggtagccaagaggacgttccagggt aaaccaggagttaaaaatcctgatcacaggcgaagtagtcacaccacagtggtgatgtg acaaaaatattggtccagttgatggagatycgattacgtcaacggaagaaattccgtttgat aaaaaacgcgaatttgatccaaacttagcgccaggtagacagagaagtcgttcaaaaagggt gaaccagggaacaaaaaattacaacacaaacaaactaagaacccattacacggggaaaaa gttggcgaagggtgaaccaacagaaaaatacaaaaaacacagtagatgaattcacagaa tatggtggcgaagaaatcaagccaggccataaggatgaatttgatccgaacgcacgaa ggtagccaaggagcgttccaggtaaacccaggagttaaaaatcctgatcacaggcgaagta gtcacaccacagtggtgatgtgacaaaaatattggtccagtttgatggagatccgattacg tcaacggaagaaattccgttttgataaaaaacgcgaatttgatccaaacttagcgccagg acagagaagtcgttcaaaaagggtgaaccagggaacaaaaaattacaacacacaaact aagaacccattacacggagaaaaagttggcgaagggtgaaccaacagaaaaatacaaaaa caaccagtggtgatgagatcggttattatggtggcgaagaaatcaagacaggccataaggat gaatttgatccgaacgcacccgaaggtagtcaaaacacgcgaaccaggttaagccaggagtt aaaaatcctgatcacaggcgaagtagtcacaccacagtggtgatgtgacaaaaatattggt ccagttgatggagatccgattacgtcaacggaagaaattccgttttgataaaaaacgcgaa tttgatccaaacttagcgccaggtagacagagaagtcgttcaaaaagggtgaaccagggaac aaaaaattacaacgcacaaactaagaacccattacacggggaaaaagttggtgaaggt gaaccaacagaaaaatacaaaaaacacagtggtgatgagatcggttattatggtggcga gaattcaagccaggccataaggatgaatttgatccaaacgcacccgaaggtagccaagag gacgttccagggttaaacccaggagttaaaaatcctgatcacaggcgaagtagtcacaccac gtggatgatgtgacaaaaatattggtccagttgatggagatcgattacgtcaacggaagaa attccgttttgataaaaaacgcgaatttgatccaaacttagcgccaggtagacagagaagtc gttcaaaaagggtgaaccagggaacaaaaaattacaacgcacaaactaagaacccattaca acaggagaaaaagttggcgaagggtgaaccaacagaaaaatacaaaaaacacagtggtat gagattgttcattatggtgtgaacaaataccacaaggtcataaagatgaatttgatcca aatgcacctgtatagtaaaactgaagttccaggtaaacccaggagttaaaaatcctgat acaggtgaagttgttaccacacagtggtgatgtgacaaaaatattggtccagttgatgga gattcgattacgtcaacggaagaaattccgttttgataaaaaacgcgaatttgatccaaac ttagcgccaggtagacagagaagtcgttcaaaaagggtgaaccagggaacaaaaaattaca acgccaacaaactaagaacccattacacggagaaaaagttggcgaagggttaattcaacgaa aaagtcaactaaacacctgttgacgaattgttgtagtatgggtcaacaaaagcagaacca ggttaaacccagcgaacccaggttaaacacgcggaaccaggttaaacccagcgaacccaggtacg ccagcagaacccaggttaaacccagcgaacccaggtacgcccagcagaacccaggttaaacccagc ggaaccaggttaaacccagcgaacccaggttaaacccagcgaacccaggttaaacccagcgaaccc ggtacgcccagcagaacccaggtacgcccagcagaacccaggttaaacccagcgaacccaggtacg ccagcagaacccaggttaaacccagcgaacccaggtacgcccagcagaacccaggttaaacccagc gaatcaggttaaacccaggtgaacccaggtacgcccagcagaacccaggtgaacccagcgaaccc aatgatcaatgcattcaacagataaaaaatcaattacctgatcacaggtgaacccaggt caagcgaatgaggaacccaggttagtcggatctctatttagcaattgtcggtacattgttccata tttggtcgtcgtaaaaaggtaattgaaaaat</p>

268.	mtkkekdykkslegqktrvkiykgkswwkasineieilktmglpflskneiqlenvtekt kghklkksaakttalvggaftfnmlnnhqafaasetpitseissnsetvanqnsttikns qketvnstslseshenstnkqmssevtntagsssekagisqqsssetsnqssklntystdh vesttinndntaagdqmkssnvtstskstqstssseknissnltqsietkatdlatsear tsnqtsnltststsnqssptsfanlrrtfrrftvlnmaapttstststssltssnsvvn kdnfnehmnlsgsatydpktgiatltpdaysqkgaislntrldsnrsfrfigkvlngrny egyspdgvgagdgigfafsppglgqigkegaavgigglannaafgfkldtyhntstprsdak akadprnvvgggafga fvsdtrngmatteestaaklnvqptdntsfqdfvidyngdtkvmt vtyaggtftrnltwdiknsggttflsmtastggaknlqqvqfgtfeytesavakvryvd antgkdiipkktiagevdgtvniidkqlnnfnlgyysvgtaldakapnytetstgtptlkl nssqtvlykfkdvqgppqisvdsqtrevgktinpititttdnskdvlttvtglpsglfsd qkltsegtsevgttttvtvnttdatgnvtstkqftitiqdtisppvntpsqasevftpi nptititadnsgkvvtthvtglpqqkfdastnsivgtptqigtntititieddasgnktt tkinyevtrnsasdststsi vnevstsisnstslsdsvkasqslstkestskslsgslsa stnsasikasasastskklseasastsmasasikasasastskklseasaststsdasi kasasastskklseasastsmasasikasasastskklseasaststsdastqasesast skklseaststsdasaststsedstsestslsdstsaasleasaststsdasaststsed snststslseaststslseastststsdasastsaavsdnsastslreststslsdststst sdaststsedsdaststsgssstsvsdstsaastseaststsisdnststslseast stslseastststsdaststsmvdsnsastslseaststsvsdstststseaststsed snaststslseaststsvsdstststsdaststsvsdnsastslseaststsisdnststst sdaststsvseaststskklseasastsmasasastseaststslsgststslsgstst stseaststsvsdnsastslseaststslsdstststsdaststseddnststsmse slstsvsdstststsdaststsvsdnsastslsdststsisdnststsdasastseast seaststsvseaststsvsdstststseaststseaststsvseaststsvsdstst stseaststseaststseaststslsgssstsvsdstststseaststsvsdnsaststslse ststslsnstststsdaststsvsdnsastslsgslstnvsdstststsdaststse sdnsastslsgslststslsdstststsdaststseaststsvseaststsmvdsn ststslsdststsvsdstststsdaststsksvseaststsvseaststslsdststsm stsetftsqspinsesqfigdlsedti vtqskntnmlnktgkdydlgeqrgytdseghn etqsnqadnhsnmlldllhqnrlqdkvvkqptkgedgvvsngfiavavilafglakksr kdddddqgsk
269.	mkkvtiastlavslgiagylsgheahasettnvdkahlvdlahnpaelnakpvqagay dihfvdngyqynftsngsewsyavagsdadytessnqevsantqssntnvqavsapt ssesreytststtsapshnyshsssvrlsngntagsvgsyaaqmaartgvastweh iiaresngqlharnasgaaglfqtmppgwgstgsvndqinaaykaykagglawgm
270.	mnknkvigstnvdkflnvkrfppkgetlhinagkefgggkanqalaasrlaadttf iskvgkdgnanfiledfkagihtqyiltseesatggaftvdeagqntilvyggnmtl satdvmsvdafigadfvvaqlvpeaieqafkiarkqnitvlnpapaielpksllel tdiipnetaealltgislnnesdmketatyfldlgisavlitlgeqgtycayqeqykmi pacnvkaidttaagdtfigaflselnkdisnlesairlanqassltvqrkgagasiptrk eveaeyn
271.	malkkykpitngrrnmttldfaeitkttpksllqplpkragrnnqgkltrvhggghkr qyrvidfkrnkdgiiakvdsiqydpnrnsaniallvadgekryiiapkgqlvggtvesga eadikvgnalplqniptvgtvihnlielpkgkgqlarsagassqvlgkegkyvlirlsge vrnilstcratigvgvnlqhelvnnvgkagrsrwkgrvptvrgsvmnpndhphgggegrap igrpspmppwgkptlqkkttrrgkssdkliivrgrkkk
272.	mkskftillftiststvlvlviinyntqsgsyisthysnnkiktatlfhgyggserse tfmvkqalnkvntnevitarsvsegkvyfdkklseadanpvkvefkdnknknfkenayw ikevlsqksgqfigqgnfvghsmgnmsfafymknygddrhlpqikkevniagvyngiln mnenvneilvdkggkpsrmaayrqlslhkiygcgeievlniygdledgshsdgrvsns ssqslqyllrgstksyqemkfkagakaghsqhlenkdvaneilqfiwet
273.	mkigidaggtlikivqehdnrryrtelttniqkvidwlnneeletlkltggnagviadq ihhspei fvefdasskgleilldeqghgiehyifanvggtgtsfhyfdgkdqqrvgvgtg ggmiqglgyllsnitdykeltnlaqngdrdaidlkvkhiykdtteppigpdltaanfngvl hhdnqftsanklasaigvvgevitmaaitlareyktkhvvyigssfnnnqllrevveny tvirgfkpyyiengafsgalgalyl

274.	mtlnnhfaytfeerptklwclckpdgtrieriadfsklggtfkftnvtlhfldplqvfs edtkqlernkvvdlnkylidyryngyrdifviddiksandsdfitlnldrsaselnk kaaneieillgstipgmknkilsvyaplwlghvdkidvkrletgsnttnalidnics lfdaaiyaninrtisfyhkdnvgnrgrlrvrensylksfedqfsvskdivtrlypfqgsg ltiqsvmpagssyiedfsyfmspfkrdrnnrvlqhsdymdelchalldygefayaskkdq agelskqysailkehsqedfrlnqlsatlqrlnervelwkpksyidldgtkvknfkitvp kssyylimrindgsftrikfnkqydpisgewlykltktgkfnatkfeqgleyleils ananlrvytrrssegdyeedtktieekynlekykilvkdqekvvasierlkafedgka svirsmnaknflsekllynerelyvvesvwtteenhtdagelyddavqmqkeqkkinrtitv dlvnfigslahkddwklngvdkvfvqnkifntkikayitemqldfqtngvkitisidfd ykdldtiaeklaqtstssqvdfhkqgqiregtgritdmrliiegewdankkrvmagnet vdigshgvkvikenpnefvimvggviamtrdngetfktgitpeginaemligkmiaget ltfenesgtvfkdkdglyvnsknfhlvsndgeedyfdklkremsenakqtdmleeykk evsqtiseatdvrvnvdnaadilqaafadgvtidveklrisetlaqlekenrefedkinl alnhpyiteedtielnnsiveysmyetlvisinesvsdkmltpgeseeingniniifree ikdiislvieeiertknaqlgatleeakdyttrrvddikdelkdlnnsfkslnstveesl qdnifdaaleaiktvtvltkseyqditnryssmsantdlksesklldtkskytldtsfn dfvkiyidentmdriadetekvnykkkydtlqklnsdymkkydncileiskysndaadv lgdftaiatelqndfqdvkdnwaeftkqttlesfkdgivteaekarlrvqldmdresmdi eeryksllangytntdtknrltasrpsylsvhaslrkvielqiadgkvdesektlanisl ntyntgtltaysktigaelntlsqiissdvaskkveefngvitissdvdtikkqrdgavi tyyysgvptlsndpakswtndldkldhikdmyldtksgyaytftksqgtsyswkpldtqvi vssllkqaknaqtdadnkrvfvtpippydgqdmwtqsgqgdiyvctsratsqsfvssdw vkaskytdtdvakqaakdledykvkmtkdkfklndgvstfktevkvdkdgioteaektr lrvqldildresqdierynsifnsqyadtqvktisnarstynnsitklrntiqtvied gkvtptektntanqtltaymnaitsysaaigaelnsmkviaqkeatsqvnqfneviknin lvtidqkvqdgaietfyyysgvptltnipasywttaskreahlgdlyldtatgvayrflk kgttsptypypisidqitdalnraktaqtdadgkrvfvntpvpytdgqdmwtqsgasgd ilvctpkakggisidswkaskytdtdtvansavqqineykrtnnidadlkrktsdfe ktvvnafddrvisisesssikgqlallnhekdrltrqyenilrmsnlvgaektklstaes nintklsdlsttinsaivdnki vdaesksvtskfelykasvneyqlafdnalnsilreia ssqakldedwkrtefstdsdgiervagakfidskwttdwrntvnpaiqqvsnitgysen lllnesrsdganntthsfiryyltrpletgktytlkasvlttderqsgqisvypyspng aretvnikdgkitytftagtestqflliykdvaggsdvdlntiekailvegnkvgtgwspa peetssalrdyntrissaetfieknkekisqiatksdvdaslskvatyatqynvssgtny qiplqeyngsfftdnytyevvaknnsissnnvataifvskgsnngyelveldnmsktgan prfvldksgrpsistfsgqsttdqdisviytkylgsasainttkslieqtassielqvkl taeteynillnsdfssgwegwinvdppqysivdntfgitlpdaitknknkntvkmty kntnypsvfsnfisvkggevaigehltiltcyayipssskgkltniyieafagyekdkq snpmiarheilpkdfeynkfwrtastaiptstnsegkkinylraclrydgkngsvnnsai fyyalpqldtvgkptewslsrlvdfsteqlaakialnpsvdiarnidntdmskliys ngtlnisgdtltisnnssnevinpkgtlkkdgvvfkfngldtsdysvqayepqfssw nnikatdpakskynyrhiepnnngyvtintgvynfavghkqllevnntknarvnrty lynkrlykigmsassrgksklyiifktktgdtllhqeivssssmvyppditidqaklgy pnnlpdffeqlagaygennsidqgffrirrmamtdtpnaev
275.	myntvqhattytknkretavligvhagtdrqnfnfestmeeldalsqtcqlnvkqgitqnr eqfdbkyyvgkgkideiksfiefhdidvvvtnldelttagstklndnlgiikiidrtqlile ifalrarsregklqvelaqldyllprlhhghgkslsrlgggigtrppgetklemdrhrirt rmneiklqhktvvdhreryrnkrengqvfgialvgyttagksswfnvlaneetyeknif atldpktrqigvnegnliisidvtvgfiqklpttlvaafkstleekagadvlmhvvdas eyrtqldtvtngiindldmhipqvvi fnkkdlcneqmdvpsksahvfvsrdenkqkv knlvigeiknslspyei vdsadadrllyflkqhtlvtelidfetqasyrikgfkl
276.	mmiivmlilsyligafpsgliigklffkkddirqygsngtgatnsfrvlrpagfi vtlfd ifkgtitvfflpwfhadgvistfftnglivglfailghvpyiylkfnggkavatsagv vlgnp illlilailiffsvlki fkyvslssiaaiscvgisliihdyillavsgivsiil iirhksni vrfkgeepkikwm
277.	mmnhsealteqvfsfaselyaygvrevvispgsrstplalvfeahpnikt wihpdersaa ffaiglikgsekpvaillctsgtaaaanytpalaaesqisrlplvvltsdrphelrsvgapqa invgmfnsvnvgfqlpdiadgsehtidtinygmqiasqlylgphrgpihfnlpfrepl pdldrvdl ltsvktlphqksisvddikdlqekngliivgdmghqavdgiltystiyd lpiladpqlrkekhpnvittydlyraglnlevdyvirvgkpwiskklngwklktday qii vqndqidvftpphisyeisandffrs lmeepilverkwlgqwgslqqaricisd ylkhatdeaa yvgsliqklktedtlfvgnsmpridvdlldfdeasvyanrgangidgv stalgaahknvtiligdl sfyhdmgllmakinelhinivlvnnnggifsylpqrksa tkyferlfgtptglnfeytailydftfkrfdnldfkyael skmgshmyevitnrdenlh qhgnlyqklseivnvtl
278.	makkfnyklpsmvaltlfgtaftahqanaaeqpqnqsnhknvlddgtal kqaekaksevt qsttnvsgtqtyqdpqtqvqkdtqsttydasldemstyeissnqkqqlstddanqg tnsvtknqgeetndltgedktsdtdnqlgetqsvakenekdlgananneqgdkkmtasqp senqaitqtasandnesqgksgqvtsegetatpkvsntnasgynfdydeddsssthdh epislnnvnatskqttsykykepaqrvtntvkketasnqatidtkqfptpsatagprt ysvssqktsslpkytpkvnsinnnyirkknmkaprieedytsyfkygyrngvgrpegiv vhdtdandstidgeiafmrnytnafvha fvdgnriietapt dylswgagpygnqrfinv eivthdydsfarsmnyadyaatqlgyynlkpdsaendgrgtvthaa isnflggt dha dphqylrshnysyaelydliyekyliktkqvapwgttstkpssqpsqsggttnklvt sarnvgaqkptnnglyttvydskghktqvgktslvtkatlgknkfylyvedynsgkkygv kqgdvvyntakapvkvnqtnvkvagstlytpvpgtpkvaskvsgtngtffkatkqgqid katylygtvngkskwiskyyllttaskpsnptkpstnnqltvtnnsgvaqinakngslytt vydtkgktnqigrtlsvtkaatl gdkkfylvgdyntgtnygwkwgdeviyntakspvki nqtnvkvpgvklhtvpwgtymqvagtvsgkgdqt fkatkqgqidkatylygtvngkskw skyylltapskvqalstqstpapkvkpsqtvtvngiaqvkanngsirasvydktaksgtky anrtflinkqrtqgnntvylldgtsntplgwvniindvttqngikqtqsigkysvkptnn glysiawgtknqgllapntlanqafnaskavyvgkdlylygtvnnrtgwiaakdlignst daqstpyntfyvinnksyfympdkanryslkpyyegtftvikqkngvkvwygqllid gkyvwikstdlvkeikiyaytgmtlnnainiqsrlykypgvneplkwsnanysqiknam dtkrlandsslykqflrdqpqylsaqalnklkkgvlenqgaafsqakkyglnelyl ishalvetngntsqalakgddvskgkftktghkyhvnvfgigafdnalvdgikyknagw tsvskaiilggakfignsyvkagqntlykmrwnpanpgthqyaatdinwanvnaqvklqfyd kigevgkyfeiptyk

279.	vafefrlpdigegihegeivkwfikagdtieeddvlavqmdksvveipsvsgtveevl vdegtrvavvgdvivkidapdaaemqfkgghddedskeekespsvgeasstqsqekte vdesktvkampsvrkyarengvnikavngsgkngritkedidaylnggsseegsntsaas estssdvvnasatqalpegdfpettekupamrkaiakamvnskhtaphvtlmdaidvqel wdhrkfkfkeiaaaggktklftlpyvkalvsalkypalntsneeagevvhkhywmigia adtdkgllvpvvhadrksifeisdeinelavkardgkltseemkatcttisnigsaggq wftpvinhpevailgigriagkpivkgeivaapvlalsisfdhrqidgatgqnamnhik rlinnpelllmeq
280.	mnetdeisqlynkhrplslsglakvplvhrasigglvlnvaeinrikrlvqvngqkftfy nqmldeedevkypilhdkmnhlpiltdlfeinetcdahdlfdhasyltgsirsksirtn qrirgnldrivknqgnqkklsdaitvtrndrnvipkayrqdfngivhdqsasggtlyl epnsvemmngisrlrndeavererilteltgfvsaeadaalliaesvmgqidfliakary artikgtkptfkedrtiylpnafhplldkdtvvtantiefiddvetviltgptggtvtl ktlglilivmaqslliptldgsqslsifenvydcidgdeqsieqslstfsshmkniveild adqnsllilfdelagatdpsegaalamsildyvrllgslvmatthypelkaysynregvnm asvfdvetlspityklimgvpgsrnafdisklglsliniinkaktigtdegeinamies leqnskrvdqgrieldrlvreaagqthdalskqyqyqmyetslmdeakekanqrksatk eadeilkelrnlrdhkaevkehelidkkkqlddgyevksikqhvkkkydytihtgdevk vlsyggkgevelelvgeaavvqmglikmklpiedlektkkkkkptkmvtrqnrqtikte ldlrgyryeealneldqyldqavlsnyeqvviingktgalqkgvqqhlkhhksvrqfrg qmpseggfgvtvaelk
281.	msffkrlkdkfsskneddikqlddesvdsnvnsdsdsmdpndsdeqvkpkpkpkklsead fdeglisiedfeieagkigakfkaglekqrnfqeqnlnliarykvdedffeaaleem ltadvgftvnmkltdelrteaqrnigetedlrevivekiveiyhqeddhseamniiedg rlnvilmvgvngvgktttigklayryqgegkvmklaagdtfragaiqqlnvwgervgvev vsqnegsdpaavvydainaaknkdvdlidctagrlqnksnlmqeldkmkrvinraipda pheallcltdattggnalsqarsfkevtvnsgivltklgdtagkvilairnelhipvkyyv gigekmdldqpfpesvyvylfadmiegnedipeeisrnsseeseegn
282.	mkrnwkeavayqvyprsfndsgdgigdlplieklldylenlidviwlsmpypspndd ngydisdykgimefgrtmdfdqlssihqrgmklildlvnhtsdehpwfieskssktn akrdwyiwadcpkpgdseppnnwesifngstweifestkqyfhfllskkqpdlnwepndvrg avfemmnwfwfekidgfrvdaitthiknfeagdlpvpdgkfkfapafdvdmnpgpigeqlw emkdklslsrydmtvgeangvtpndaeewvgeengkfnnifqfehlglwstgdkfdvks ykqvlrwrqqlenvgwnalfienhdqprvstwgddknwywesatshatayflqggtpf lyqgqegimtnypfesiesfndvavkteyqivkkggdvnlldkykmenrdnartpmqg nnsinagfttgkpwfhvnpnyteinvkqqlndkfsilsykaliglkksdliytgykfnm vdaenkqvfyaytrtfkmtvliantnevselnlpfeldissvdiklhnynhndinldh ikpyesfvvei
283.	lshrklfpsi fhlyqgdnldehiaiigirrdynneqfrdqvkasiqtyvkdtdridefm thvfynktdvdsdesysgllqfserldsefalgnrlfylamapggfvisdydkssglt qttgfkrlviekpfsgdlksaeslnnqirrsfkeeslyridhylgkdmvgnievlrfana mfeplwnnykislqvtsssevlgvdrgygyessgalkdmvqnhmlqmvallameapisl nseidraeksvlkslrqlkpeevkknfvrqyqdgndgkqkvsyreedrvakdsvtpt fvsqkltidnfrwagvpfirtgkrmskktigvvefkevpmmlyyettndllsdnllvin iqpneqisllhlnakniqgidtepvqlsyamsaqdkmtvdavenllfdclkgdatnftth weelkstwkfvdaiddqwtmvepcfpnyeaagtnplesdilllsrdgnhwwddih
284.	mikkneelndmeylvtqengteppfmeynwhfegkiyvdkslgkplftsedkfesncg wpsfskalnddeiivelvdksgfmirtevrsekanshlghvfnndpkekgglrycinsaa qfipydkleelgygdlikhfk
285.	lklafaitaasgaavvshhdaeastqhkqvsgeslwtaeqqyntsvesikqnnnlsn mvfpggvinvvgssasqntssntssssasshtvageslnliankygvsvdalmaqanhng ylimpqiltpingggsgsggtatqtsngytspsfnhqnlytegqctwvfydkrsqagk pistywdakywasnaandgyqvndtpsvgaimgstpgpyghvayveringdgsilise nyangpynmyrtipasevssyafih
286.	mariaatklgyepsnsvfntviefvlhneayprlyriktrdnlikisqaneisrqitng tmtleakylgleeiyvakrdsslpfkiaaaiatsfilylqggrrlvdiitavlagtigyl vveildrklhaqfipefigslvigilsvighafvpsgdlatiiaavmpivpgvliitnai qdlfgghmlmfttkslealtvafgigagvssiliv
287.	mtfedlstregrwkhfsgvdpvkgtkpttknemtdlqsthnkflfeieevgiknltypvl idqyvtaglfstslnknekginmsrilesekyhndglefentlhlqilrtldqkmnq naagvdvsgkwffdryspvthikavghadvtyglaienhtvtrkeltiqakvttlcpck eiseysahnqrgivtvkayldknnviddyknkildameanassilypikrpdkekrvte rayenprfvedlirliaadlvfedwiegfdiecrneesiqhhdafarlkryk
288.	vqkkyitaiigtalsalasthaqaatthtvksesvwsishkygisialklsingltsn lifpnqvlkvsgsssratsstngstvytvkagdsllsiaakygttyqkimqnglnnylif pgqklkvsgkatsssrakasgssgrtatytvkygdsalsaiaskygttyqkimqngltnf fiypgqklkvpggssssssnntrsnngyysptfnhqnlytwgqctwhvfnraeigki stywnannwdnasaadgytidyrptvgisiaqtdagyyghvafervnsdgsilvsemnw saapgnmtyrtpayqvnykfi
289.	vtkkafigysrtsdehlrvvrigeslrvdhgidvildvwdctegddlnffmesmvdet idfviilsdfqyfnrandregvgvkestiitsqiydkqkdskfipvflidldngkpslpt fcntfrfaidmtdielkieiarkihdkplfekprlgkvpdyngnqnelkkaikkltl sksynetrnfcealdliykteniensveeynkddmltikevfdtwkefityalnnndfy freliehyrnrlklteefenpmtirfnysfllilvseslssganeflkdllnakfhfs rreanyvilslypqvlslskysyntnvkmlaemyfegkelkvqddavilyteslnkkdi hsvyetqwhvillysrwpmleqgtinilinkfrskkyldqdfldfgssqrevfenydkiks tqeiptifnfidkeieisy
290.	mhyllkvtyiisllilvsgcgdskekietikqfnkmlnvpytknledfydkgyrdeefdk ddkgtwirsemtkqpkkimtskgmvlhmnrtstrtgyyvirkesednkseiddeek ypikmnnkiiptqkindnklneienfkffvqygsfknsddykedgievnpnapnysaq yhlnddynkqlrkrydiktkktprrlmrgagdkgssvgyknleftvknneenyft dsinfnpksgksl
291.	vkhsklklilcislilffigggcgfmnkddgketeikqfnkmlnvpytknlenfydkeg yrdeefdkddkgtwivhskmviepkkgkmesrgmvlfinrnrtskgyfivneiekdrkg rplnnkklkypvkmknkiiptkpsindklkeienfkffvqygnfkdknykdgdisymp nvpsysakyqlsnneynvqqlrkrydiptkvpklilkdgdlkgssvsgsknleftfien keeniyftdsvlfpsednes

292.	mrylkkvtiylsllilvsgcngketeikgnfnkmlmnyptknl edfydkgyrdeefdk kdkgtwivsgtmtiepkgsymesrgmflylirnrtrtkgyvyrktdtdskgrlkddskr ypvkmehnkiiptkpiipndklkkeienfkffvqygnfknlkdykdjtdsympnpsysak yqlsnndynvklrkrydiptnqapklilkdgdlkgssigsksleftfienkeeniffs dgvgftpseddes
293.	mkhsskiiivfsliltiltiffggcgfinkedskeaeikgnfnkltlsmypktnledfydkge yrdeefdkdkgtwiiirsemtkqpkgkimsrgmvlirnrtrtakgnfikritennkg ipdvkdkiyppvkmehnkiiptkpiipndklkkeienfkffvqygnfknlkdykdjtdsymp npsysaqyqlnnndynvklrkrydiptnqapklilkdgdlkgssvgsnkleftfven kkeniyftdsinfnpsergn
294.	mrylkkvtiylsllilvsgcngketeikgnfnkmlmnyptknl edfydkge frdeefdkdkgtwiiirsemtkqpkgkimsrgmvlirnrtrtakgyflideikddns rpienekkyppvkmehnkiiptkpiipndklkkeienfkffvqygnfknlkdykdjtdsymp npsysaqyqlnnndynvklrkrydiptnqapklilkdgdlkgssvgsnkleftfven keeniftfdvqftpseddes
295.	mktkykpyrhqlrrslfastifpvmvmiiglisfaiyiwvwehrtihqhtytgtelqrl dkhfhftvftgqgkqwrhvdlshtpdtitkmkrqlilkqvhqgpaillydilkssgssftnnye qltdttkmyliskryidfkddtyilkiymsstpllknlkknsggsalivdsydtvlytndd rfsgikkyqppqpfgmneslknshhahliiykdihetiedgiallvumgvvllilvifg yisadmarrkgsedieaivrkkiddaknrhlgsyeplkkhseleeinmyyidl fmesneqll qsieqtrmrllrdiqlkeierqfqpflfntmqtiqyilplspkvagtvigqlsgmlrysl rtashtvklaelisyigqyvaigmrifddmiqlyidapedvqhggtigkmmllqplvenaik hgrgsleplkitirirltkrklhlilvhdngigmspsphlervrqsllhdvfdtthlglnh nrailqvgtyarhlifsrshqgtlmcyqiplv
296.	vddtkyvgpvdgdpitsteepfdkkrefdpnlapgtekvvqkggepgtkititpstknp1 tgekvgegeptekitkqpvdieivhyggeeikthgkdefdpnapkgsqtkpgkpgvknmd tgevvpvppvddtkyvgpvdgdpitsteepfdkkrefdpnlapgtekvvqkggepgtkitit tpstknp1tgekvgegeptekitkqpvdieivhyggeeikthgkdefdpnapkgsqtkpgkpgv kpgvknmdtgevvpvppvddtkyvgpvdgdxiststeepfdkkrefdpnlapgtekvvqkg epgkttittpstknp1tgekvgegeptekitkqpvdieivhyggeeikthgkdefdpnapk gsqdevpgkpgvknmdtgevvpvppvddtkyvgpvdgdpitsteepfdkkrefdpnlap tekvvqkggepgtkititpstknp1tgekvgegeptekitkqpvdieivhyggeeikthgk efdpnapkgsqtkpgkpgvknmdtgevvpvppvddtkyvgpvdgdpitsteepfdkkref fdpnlapgtekvvqkggepgtkititpstknp1tgekvgegeptekitkqpvdieivhyg eikpgkthgkdefdpnapkgsqdevpgkpgvknmdtgevvpvppvddtkyvgpvdgsistste epfdkkrefdpnlapgtekvvqkggepgtkititpstknp1tgekvgegeptekitkqpvd ieivhyggeeipqgkthgkdefdpnapvdsktevpgkpgvknmdtgevvpvppvddtkyvgpvd dsiststeepfdkkrefdpnlapgtekvvqkggepgtkititpstknp1tgekvgegstte kvtkqpvdieivhygptkaepgkpaepgkpaepgkpaepgtpaepgkpaepgtpaepgkpa epgkpaepgkpaepgkpaepgtpaepgkpaepgtpaepgkpaepgtpaepgkpaepgt esgkpvpegtpaesgaepqpnrmshstdnknqpldtgenrcanegtlvgsllaiyvgslfi fgrrrkkgnek
297.	atgaataaacagatttttgccttataatatttcttgatttttttaggtatcggt ttagtaataacagatttgccttgcctgttatattttaaagatttgggatttaacgttgtagttat ggattactagttgctgtcttttgcgttatctcaaatgatttatctgcgcttttgggtgacg ctagctgacaaattaggaagaataatatttatgtatagatttaattttggttttcagtg tcagaatttatgttttcagttggccacaatttttcggtattgatgtttatcgagatgatt gggtggtatgatgtgctgttatgtgtaagtgcctgggtgtgacaggttttaagtcgacattca ccaagccatcaaaaagcaaaaacttttgctcatagtccagcgatttcaattcttgagttat attttaggaacaggatttgggtggtatttatggcagaagtttcaacatcgattgccatttca tttgaggagcattaggtattctagcatttataatgtcaatttgattatgcacatgcacgacg aaaagctacgacagaagtggtttccaaaagttagagccacaattgctaaagaaaataac tggaaggtgtttatcacaccaggtatttttaacacttgcattatcgcttgggtttatctgca tttgaaacattgtattcactatacacagctgacaggtataatttaccataaagatt tcagattgctattacgggtggcggtatatttggggcacttttccaaatcattttcttcgat aaattttatgaattattctcagagtttaacatttatagcttggttcatttatattatcagtt gtgtcttttaattatttagatttttgcataatgactatttggtcaataatgtttaatcagtttt gtgtctttcataggttttgatgatgacgaccagccattcaaaaatttttttcaatatt gctggagaaaggccagagctttgcaggcggtatgaactgcacattcactagttatgggtaatt ttcataggttccttttaatcgaggtgcggtattttgatgtacacattgaagcaccatttat atggcttataggttttcatatagcaggtgtgtttattgttttaattgaaaagcaacataga gcaaaattgaaaagacaaaaatag
298.	atgcatttttatttttccattttacaatcagctttatacaacagtaacttttctctatc attttcaatgcaccaacagcctcttagtagcattgtggatttgggtggtcattgcattgag acgattttaccaatttaacggtagatttagagtttggaaaagttggcgcttcaatttttggga agcttaatttttaggcttaatgagtcatactatgagtcgcagatataaacgaccggtaatt atattcattagtcaggcattataccattagcttggtggtggtgcagcttatacgaagcact cgtttttttagtatacaatgattatacaagtgctgtaaacattttttagaagttacactg atttcaggtgcgatttgccttgcggtatttagtttctgaaattcttatatacctatacaca cgattcaacaacactgattggttaaaatcaaaaggttaagacatatataaaaattcttacaacatg aataatagactt

299.	atgataaatgcagtagtaaatagcagtaattttaatgattatgctatgtttatgtcgatta aacgtagttataagcttatttatcagtcgctagttgggtggcctaatttcaggcatgagc atgaaaaagttataaatgtatttgggaaaaatatagtcgatgggtgctgaggtagcatta agctatgctttattaggtggatttgcagcatttaatttcatacagtggtatcacagactat ttagtaggaaaaattataaatgcaattcacgctgaaaaatagtcgagtggtcaagagttaaa gtcaaaagtacaaataatcattgcatttattagctatgagtatcatgagtcacaaacttaatt cctgtacatttgcattcattccatttgcattccaccatttgcatttaagctctgtttaatgac ttaaaaatagatagacgtttaatcgggtttgattatcgggttttggtttatgtttcccgat gtgttattaccatattggttcgggtcaaattttcagcaaatatttcaaatggcctttgca aaggcaaatcaccatcgagtttaatatgatttggaaagcaatgcttatccctcaatg gggtatattgttggcttacttatcgggtttatatgtatatcgtaaaccagtgaaatgaa acacgtaaaaatttcagatagtgacaattgtacagagttaaaaaccatatacttaaatagta acaattgtagcaatactagctacatttttagtacaacatttacagattcaatgattttt ggtgcactggcaggggtactcgtattctttatttcacgtgcataaattgggtatgaatta gatgctaagtttgttgaaggtattaaaattatggcttatattgtgtagttattttaaca gcaaatggtatttgcgtgtgaatgaatgctactggtgatagatgaattagttaaaact ttaacaagttattctggtgataaataatttttagcatttatcatgagttatgtatgaggt ttaattgtcactttaggtattggatcatcatttgcacaaactccttatcgcacattata ttcattccttttggagcgtcaattggactagatacaatggcatttaacgcattgtatgga acagcaggtgcatttagtgactcaggttcgctgcaagtgattcaacattaggcaacct gggggattaaatgttgatggccaacatgatcatacagtgatatacgtgtaccaaacttc ttgtttataaatattcctttaatgattttcgggtactattgctgctatggtacta
300.	atgaatcataatgtttattatcggttattgcatttaactagttgtcattttctatgttagct atgctcattcgcgtttgtgctaggcccatcacttgcgcatcgtgttgcgcattagatgctg attggtctccaatttaattggcagttatagcattattcagttattttaaatattaaatc atgatttgcgtttattatgatgttgggtatatttagcttttttaggtactgcagttatctct aaatttatggcaaaaggttaaggtgattgaacatgatcaaatcactatgag
301.	gtgaataggaaatcgtttaaactagttgtgttcactgctaatttttagttgtgagcagtagcg ggttgtgtgtcaaaaagatactgaagagaaaaactgaaatgacgacaataaaagatgaatta ggaactgaaaaaatttaagaaaaatcctaaccgtgttgtgtattagaataatagttttgct gattatttagcagcatttagatatgaacctgttgggtattgcagatgagggcagcactaaa aataaacaaggtcagtaagagataagattggggcatatgaatcgggtggatctagaccg caaccgaaataggaagtgataagtaaattaaaacgggtttgatcatgcagatgttagc agacataagaaaaatcaaatcagaatttagcaaaattgctccgacaatcatgttagtttagc ggtacgggagattataatgcaaatattgaagcatttaaaacagtcgctaaagcagtaggc aaagagaagaagggcgagaagcgtctggaagcatgataaaatatttagcggagattaga aagaaaaattgaacagagtagcttaaaatctgcatttgcattcgggtatctcaagagcaggt atgtttatttaataatgaagatcacatttatgggacaattcttaattaaaatgggtattcaa cctgaagtacacaaaagacaaaactacgcatgttgggtgaacgcaaggggtgctcttata tatttaataatgaagaacttgccaatcaatcacaaggttatgatttttagcactgac ggaaaaacggacaaaaatagaacgaaatttcatgactcgtcagtttggaaatcattaaaa gctgtgaagatacaaaagtttatgacgttgaccgaaataagtggttgaatcaaggggg attatcgcgaagtgaaggtatggcagaagatttagaaaaaattgcagaaaaagcaaaa
302.	atgactggagaacaatttactcaaatataacgtccagtaagtagatttaactgaaaaagtt caggttgggttatgttgggtgatgtttattagtgcttactgtcattagcatgtttatagca cttgttttcatcagtaataacacatcgattgctaatcttgaaatacatttaacaataat gcatttatccagcaatttattagctggaaatggctataatacaacacaaatttgtaatatgg ttacaaaaatgggtatgggttatcttactttattgtttgtttgtgtgatttctatt ttagctctcatatctatgaatataagaattcttgcaggtttcttattcttaatatcagca attgttaacgattcctttagttttacttatcgttacttttaactcagcatattattcttt attatttgcgatgatgtatttataagaaaaagataaagttgaaatgggttgcgcacacat tatgaagatataacggaccgatttatgattatcgtgaacctgtgttatgagcgccccc ccgaagatgatatttatgatgtgcctaaatataaaaaagaaattggataaatcaaatact gtatgatcaagaacaggaaagagataaatatgatcaatttccataaacgtgcagttgaa agtgaaatataatcatgatgagcgactgaggaagaacacatcagttatccagacaggt aaatcacaaacaaaaagttactgaagaactaggtattgaagatgatgggtattatgcagaa cctgaagttgattccaaaagaattgaaagcacaacaaaagcgagaaaaagcgtgaaattaaa gctaagaaaaaagaaaaacgttaaagcttataaaccaacgaatgaagaacgttaggaaaaat caactagcgcagttagtcaacgtcgaatgaatttgaagagcgacgtcaaatttacaac aatgatatttctgaagaacgcaattcaagtgaaattgaaggcaaaaaagagcaagaa
303.	gtggaataacaaatataagaaagtgaaagaaaaacgatttaaattaaaaaatgccaggt gcatttatgattttatttcattttaacggttgttgcagttatagcaacatgggttattcct gctgggtgcattatttcaactttcttacgaacctcatcccaagaactaaagatagttaac cctcataaccaagtgaaaaaggttccgggtacgcaacaggaactagacaaaaatgggggtt aaaattaaagattgaacaatttaaatcaggtgcaatttaataagccggtatcaattccgaat acttatgaagatttaagcaacatccagctggacagaaacaaatacaagtagcatgggtt gaaggtacgatagaagcggctcgatatcatgttattcattcttctgactagggggacttatt ggcgtagttcaagccagtggttcttttgaatcgggtattgttagctttaacgaagaaaaa aaagggcatgaatttatgctaattgtgtttgtatcaatactaatgatttatcgcgggaca ttatgtgtgtattgaagaagaagctgttagcattttatccgatttttagtccctatattata gcgttaggatacagattctatcgtttcagttgggtgccatttccctgccagctctgtcggt agtacattttcaactattaaaccgttctcgggttgaatttgctctaatgcccgtgtgaca acttttacggatggcttgtattggagaataggtgcttgtattgtcgggtgcgatttttgtt attagttattttatattgttactgtaaaaaaattaaaaacgacccaaagcgtcatattct tatgaagacaaagatgcttttgaacagcaatggtctgtattaaaagatgacgatagtgcc cattttactttgcgtgaagaagataactctacattatttgtactaccatttcaaatatg gtatggggagttatgacgcaaggttgggtgttcccgatttggtcttcagcatttttaata tttaacatttataaatatgtttattgtgtgggacaggttaaatctggattgggagaaaaagga actgtagatgcatttgcattgggtgcacaaagtttagtaggtgtatcttcaattattgtgt ttagctcaggtatttaatttagtgtgaatgaaggtatgatttcagatacaactcttacac ttttcatcatcttttagttcaacatagagtggaacattttatcatcgtattactattt attttctctgttttaggttttatcgtgccatcatctctggcttagcgggtattatcaatg cctatctttgcaccactagctgtacagtaggtataccaagattcgtcatcgttacgaca tatacaatttggcacaatgcgatgtttattcttagcgcgactggacttgttatggccaca ctacaaatgttaaacatgcgatattccattgggttccgatttgattggccgggtagttgct ttgtatttgattttcgggtggcgagtactaattacgcaagttactaatttattca

304.	<p>atgagcttttttaaacgcttaaaagataagtttgcaacaataaagaaaatgaagaagtt aaatcccttaacagaagaacaggctcaagacaaattagaagatacacattctgaaggttca acgcaggagcgaatgatttagcagaaaatgctgaagtgaagaaagccacgcaagttg agtgaaagcggattttgatgacgattggcttaatatcaattgaagattttgaagaaatgaa gctcaaaaaatgggtgctaaatttaaagcaggactcgaaaaatctcgtaaaatttccaa gaacaattaaataatttgatagcgagatatcgtaaaagtagatgaagactttttgaagct ttagaagaaatgttaactactgcagacgtcggttttaatacagtgatgacgttaactgaa gaattacgtatggaagcacaacgacgttaattcaagatactgaagatttgctggaagtc attgttgaaaaaatcgtagagatttaccatcaagaagatgataattcagaagctatgaac ttagaagatgggtcggtttaaattgtcattttaatgggtgggtgtaaggtgttggttaaaaca acaacaattggaatttagcttaccgatataaaatggaaggtaaaaaagtaattgttagct gcggggcgatcttttagagcgggtgctatttgatcaattgaaagtttggggcgacgtggt gggttagacgttaattagccaaagtgaaggttctgatccagctgctgttatgtatgagcg atataatgcccgttaaaacaaagggtgttgatattttaactctgtataccgctggagcttta caaaaataaaacaaatctaatgcaagaattagaagaaagttaagcgtgtaattaatcgagca gtgcagatgagcctcatgaagcattactatgttttagatgctacaactgggtcagaatgagc ttgtcacaagctagaactttaaagaagttaacaaatgttacaggtattgtattaacgaaa ttagatggtacagcgaaggtgggtatcgatttagccattcgtaattgacacatccca gttaaatatgtagggttaggtgagcaatttagatgacttacaaccatttaaccctgaaagt tatgtctacggcttattcgctgatattgatacaaaaatgaagaaataacaacaggtgaa aatgatcaaatgttaacagaagaaaggacgataatcatgggtcaaaa</p>
305.	<p>gtgttaaaaaagtggttaattcaaacgtcaacaattctttgttataactttcattagt gtaattattaacgcttattttattttctactcatatctatgattatattgtgaatgggtact gttttttagcggggctggagatggattccgctcaaatgatgccatttcaaatgtatttggat gaacatctacgtagtttttctagtttatatgatgcatcggtttggattagggtggcattat atgaaggactatcatattattatctcgctgtcacccttaattgggtcaaatttctatttc attaaaaataggagaaacgggttggtatatttaacccgacgacatacatttttggccgaca aaccaacttattatggctatgatagcagctatcataacatttgcgtgaccttctacttta tttaaaatatcacctttaaacgctcagcaaatatgatcgctacgattttatacggcatg tcaactgtgctgtatatacttttaattttacttggctattttatggaaatttattatattta ttgccattatcgattcttgggtttggaagatattttcaacaacgcaaatcgggtatttttc attgttggcagtagccttaacactatttagcaatttttatttccagttattatcaagctatt atttatagggttgcctatttatatcgactcattttcacttacaatatgacattgtctct agaacacaaaaattaaatttgcgtcatatctgctacagttttgagtggttatcaagtga tttgggtttattcactggcatttctgcgtttttggaatgacagaaagcaaaatcccatt gttgatataccggtttttgacaccacttgattatcattatttttcttttagcgatggatt tatattacagatttcaattcttactatcggttgattatttgcatttcaaacgtgattcggtt tacttttatagacttttcgcaatagtaacatggattattttatagggtcattatcacag tatttcgagctgcttttaattgggttttccatttccagaagcggttgggtgatatctta gcactatcatcaagtgtcttcttgcggattgtttattcaacatttataacattaaatag aaatatttttaacagacaaataccgctatgcattatcgcaatactttatgtattacta tcaccgacacacccacttgcaacttatagtaggtattatctctgtaattagtgcttgcggt attttaaaatttagttttatggcgttataaaaaattaacggttgcattattagtattaatc gttatgattcaacaaatcgctcattttagataaacaacaaacatggcaatcaaaccttat caacaatcattatcaacggttgaacacacatgattaccatagtaactatgtaaacagctt ataaaaaagataaaatcaaaatgcaacaggctcatttaacgcatgatttatatgtcagac tatgcattaaattcaccatttatatatcattataatggcatttccattatattctagtatt tttaattggagacattttaaaattattatgacaagacactcaaatataatgccaatcgat aaaaacagcacttatagattacttggcaatcgtaaaatttactatcactttggaatggt aatgatcgaaatagagtgaaatcatgatgacaacttaccatattggatttaaaatlaagtct gaacacaaagacaataaagttcggttggttccatttcaaaaataccatccattatccaagt gcacatattacaataaaggtcttttccaataaagaattaaaatctccattagataaagaa caagcaatgttgaagggttgggttcttaacaattataaagatgttaatacacattttaaa gccataaaaaatttactatcagattcaacaattaaattaaatagtcagcctggcaatct cctacaaaaacatttattacaagttaaacaaaataatgggtggtcactgtacagttgcca aaatcagtttctaatcaatttaaagatttgattttgaaatggatttagaattactttcg ccggataaagctcatgatgttaaagtgaatgaatatacacaagaaagaaataaactcact tataaatatcgacggcttgtaacacccgtaacgatacgcattaaagctccagatagaatt agattatcatctgctaaaggttaagtatcgagtaaaatttaaaagggtatcacggcgaagat tataccacgcttaaaagcgttcaaatcattagaagctgtcaaggttagtaagacaaag catgggttactattactaaaaataaaaattcatctgggtatattgttttgccaacagca tataatcaaggtatgaagcgacatcaggtgatcaagctttaaagttgaacagtaaat gggtttatgaccggcattaaagcacctaaaaataaacaagattcaattgagctatacc ccaccatattatttacttataacaattactatatttggcattatattgtagtattatt ttcacgagatgggcaagacaaaaa</p>

306.	<p>gtgcgtcaattggcacaagcaaaaaagaatcgacagctaagaaaaaacaacatcaaaa aaaagaacaaattcgaggaaaaagaagaatgataatccgatacgttatgtcatagctatt ttagtagttgtattaatgggtgttgggtgtttcccaattaggaataataggtcgtctaat gacagcttctttaattatttttgggtacagtagatatttaacatatatttagtactc ttagcaactgggtttattacatactctaaacgtattcctaaaactagacgaacggcgtgt tcgattgtattgcaaatggcattgtctatttgtatcacagttagtttttcaatttaagt ggatcaaaagctgaaagagaacctgtactttcttatgtgtatcagtcataccaacacagt catttcccaaattttgggtggcgtgtattaggcttttatttattagagtttaagcgtacct ttaatttcatatttgggtgtattatttactattttatttattgtctcaagtgattatt ttattaaacaaacatcaacatcgtgaagtgcgaagttgcactggaaaatataaaagct tgggtttgggtcatttaataaaaaatgtcggaaagaaaccaagaaaaaacaattgaagcgt gaagaaaaagcaagacttaaaagaagaacaaaaggcacgtcaaaatgaacagccacaaata aaagatgtgtagttttacggaagtgcccaagaaagagatatccaatttatgggcat actgaaaaatgaaagtaaaagccagagtcaccaaaagtcgaaaaaacgagtggtttgatgca gagaatagttcgaataacatcgttaaatcatcatcaagcagatcagcaagaacaatttaaca gaacaaactcataacagtggtgaaagtgaacacatttgaagaagctgggtgaagtacg aatgtatcgtatgttgttccaccgttaactttacttaatacaacctgcacaaacaaaagca acatctaaagctgaagtgaacgtaaaggacaagtagtagagaatacattaaaagatttt ggggtaaatgcaaaagtgcacacaaataaaaattggtcctgcagtaactcaatatgaatt caaccagctcaaggggttaaaagtgaataaaattgtaaacttgcatatgatattgcat gcttttagcagcaaaagatgttagaatcgaagcgcaaatacctggctgttctgcagtaggt atttgaagtgcacaaatgagaaaaatttcatagtttcaactaaaagaagttttagatgaaaaa ttcccgctctaataaaactagaagttggattaggaagagatatcaggtgatccaatt actgttccactaaatgaaatgccacacttattggtggcaggatcgacgggtagtgttaa tctgtttgtataaatgggtattattacaagtttttataaatgctaaagccgcatgaagtt aaacttatgttaatcgatccgaaaaatgggtgaactaaatgtttataacggaattccacac ttattaatccggttgttacaatcctcataaagctgctcaagctttagaaaaaattgta gctgagatggaaagacgttatgatttttccaacattcatcaactagaacattaaaaggt tataacggaatttaacgttaagcaaaatcaagaatttagatgagaagcaaccagaattacct tatatcgttgttattgtatgagcttgcagatttaattgatggttagctggtaaaagatt gaaaaatgcgattcaacgtattacacaaatggcagctgcagcaggtatcacatttaattgta gcgacacaaagaccttctgtggatgtaattacaggtatcattaaaaataatattccatct agaatagcttttctgtgtgatttccaacagattcaagaactattattgttactggcggc gcagaaaaagttaacttggtaaaagtgacatgttatacgttggaaatgggtactcatcaca acacgtattcaaggggcgtttttaaagtgaccaagaggtgcaagatgttgaatttatgta gtagaacaacaacaggcacaattatgtaaaagaatggaaccagatgcaccagtggaataa tcggaaaatgaaaagtgaagatgcttttatatgatgaagcgtatttgtttgttgaacaa caaaaggcaagtagcatcattgttacaacgcaatttagaattgggtataatagagcatct agggtgatggatgatttagaacgcaatcaggttaatcggtccacaaaaaggaagcaagcct agacaagttttaatagatcttaataatgacgaggtg</p>
307.	<p>atggctgaaaaattacaagggaactgagcaatcgccacatacaatttaattgcaattggc gggtcaattgggtacaggcttattcttaggtgctgggtcaaacgattgcattaaacggccct tcaattctatttaacatacatcattataggatttatgttatattatgtttatgaggttta ggagaaatcattatacagaataactgaatttaaatctttcgagatgtaaccaatacatat attgggccttttgcaggtattgttacgggatggacatactggttctgttggattattaca ggatggctgaagttaacggctgtggcaaaatagtttagcttttgggttccagaaattcca aactggataagtgactattttgtgtactgttattaatgtcattcaacctacttagcgca agacttttcggagaattagaattttggttctctatcattaaaaatagcgacaattattggt ttaatagtagttgggttctgtcatgattctatttgcatttaaaactcaattcgggcattg agtttcacaaatctatatgaacacggcatattcgcataaaggtgcttctggattctttatg tctttccaaatggcactattctcattttaggaattgaaatgattgggtgttacagctggg gaacaaaaagatccagttaaaacaattccaaaagcaattaaacagtgatccattagaatt ttaactattttagcttggggcgttagcggttatcatgtctattatcccttggcagcaagtt gatcctgataacagtcattcgttaaaattatcgcatgtatcggaattccggtttgtgctg ggcttgatttaattttgtatgattaaacgctgctgcttcatcatgtaacagtggtatattc tcaaatagccgtatgcttttccggtttatcaagtcaacacaaagcacctccgaactttct aagacgaataaataatggcgttccacatgttgcaatcttctgcttcatcagcattattactt gtggcagcattactaaactatattttccagatgcgacaaaagtatttacgtatgtgact accatctctacagtggtatttttagttgtatggggtctgattatcattgcataatatcaat tatagtcgtaaaaaccagatctacataaaaatgctacgtacaaactattaggtggcaaa tatatgggctacttaattttgtattcttctattttgtgttgggttattatttataat gttgatacaagcgtgcaattttatttattccgatttgggtttatatttttagcatttatg tacttaagatataaacgtatcgctgctaaatcaataaa</p>

308.

atgaatttggtaaagaaaaataaatatagttataggaagtataaagtaggcatattctct
actttaaactcggaacagttttattactttcaaacccaaatgggtgcaaacgcttaactacg
gataaataatgtacaaagcgataactaatcaagcaaacacgtgtaattcacaagataaagat
gttgctaaataatagaggttttagcaaatagtgccgagaataacacctaatacttgcacaa
accaatcaagcaaacgaatcaagcattgggttaataataatggtagtatagtaaatcaa
gctacgccaacatcagtgcaatcaagtacgcttcagcacaacaaataatcatacagat
ggcaatacaacagcaactgagacagtgtaaacgctaataataatgatgtagtgctgaat
aataccgcatataatgtaccaactaaaacaaatgaaatgggttcaggaggacatctaact
ttaaaggaaattcaagaagatgttcgctcattcttcaataaaaccagagctagtgtcaatt
gtgaaccagcatctaataagaccgaaaaagagaagtagacgtgcccacccgagacatcct
aatgcaactccagcagatccagcgggtgcagcggtaggaaacgggtggtaaccagtgca
attacagcgccatatacgccaacaactgactctaatagccaataatgcaggacaaaatgca
cctaacgaagtgtgtcatttgatgacaatgggtattagaccaagtaccacccgttctgtg
ccaacagtaaacggtgttaataacttgcggggttcacactaatcaatgggtggcaagta
gggtgttttagtcatgcaatggtaagaacgagcatgttgattcaggagataaataagaaac
tatcaagcacaaggaatgttaattgcattaggtcgtatatactggaactgatacgaatgac
catggcgatttttaatgggtatcgagaagcatttaacagtaaatccgaattctgaattaatc
tttgatttaatacaatgactactaaaaacgggtcaaggcgcaacaaatgttatatacaaa
aatgctgatactaatgatacagatgtgtaaaagactgtgaaggcggtccaactttgcgt
ttatttaagttacgtgataatgtgagaatactcaaaattcaatttgcacataaaatgac
gcaataacagatgcccgtggcatttatcaactaaagatgggttacaataactatagcttt
gttgacttatcggaacttcatctcgggtcacatgtttttgtgaaagcagaacaaatggat
ccaacagcaacaaataataagagtttactgttaacacatcattaaagaataatggtaatt
ctcgtgtctctctagatacaaatgactttgtatatacagttcaattcctctgaagggtgtt
gaatatgtgaacaattcattgactaaagattttccaagtaacaattcaggcggttgatgtt
aatgatatgaattgttacatgatgacgcaaatcgtgtgataacaattaaaagtactgga
ggaggttcagcgaacactctccggcagcacttatgctgataaaaactcgtatttaagatat
aaattacgtgttaataatgtgcccagacccaagaacagtaacatttaacgagacattaaacg
tataaaacataacacaagatttcaataattcagctgcagaagtcatactgaattgaatga
aatccataactatcgatatacatgataaagatgcattacaagcgaagttgacaga
cgattcaacaagctgattatcacatttgcgtcattagatatcttcaatgggtcgaacga
cgccacaaacgatttttagatgaaaatcgttaacaatgtaccattaaataaaagagtttct
caagcataatattgattcatttaactaatcaaatgcaacatagcttaattcgaagttgtgat
gctgaaaatgcagtttaataaaaaagttgacaaatgggaagatttagtttaatacaaatgat
gaattgacagatgaagaaaaacagcagcaatacaagttatcgaggaacataaaaaatgaa
ataattggtataatttggtagcaaacgactgtatgagcggttactagaatacaagatcaa
ggatatacagaccttaagtggggatactgcaacacccggtgtttaaaccaaatgctaaaaaa
gcaatagctgataaagcaacgaacaaagggaatttatcaatgcaacaccagatgttact
gaagcagagattcaagatgcactaaatcaattagctacggatgaacacagatgtctattgat
aatgttacaagatgctactacaattgctgacgttgaacacagctaaaaataatggcatcaat
actattggagcagttgttctcgaagtaactcataaaaaagctgcaagagatgcaattaac
caagcaacagcaacgaagacacaaataatagtaataagagaagcaactcaggaagag
aaaaatgcagcattgaacgaatttaactcaagcaacacacattgcttgaacaaatcaat
caagcaacacaaatgctgtatgttgataacgccaaaggagatgggtcaaatgccattaat
ccaattgctcctgttaactgtgttgaagcaagctgcaagggtatgccgtatcacatgtatgca
acaacacatatacgagagatcaatgctaatctctgatgcgactcaagaagaaagacaaagca
gcaattgcaaaagtgaattgctgtgtaactgcagcaaacacacaaattttaaacgctaat
accaatgctgtatgttgaacaaagttaagacaaatgcgattcaaggaatacaagcaattaca
ccagctacaaaagttaaaacagatgcaaaaatgccatcgataaaagtgcggaacgcga
cataatcagatatttaataataatgatgcccagctcgaagaacacacagcagcacaacaa
ttacttgatcaagctgtagccacagcgaacaaatatttaagtcagcagatcgaatcaa
gaagttgcacaagcaaaagatcagggcacacaaatatagtatgtattcaaccggcaca
caagttaaaacggtactcgcgaatgttgaatgataaagcgcgagaggcagataacaaat
atcaatgctacaactggcgcgactcgcgaagagaacaaagagcagataaattcgtgtcaat
acacttaaaaatagagcatttaactgatatgtgtgacgtctactactcgtatgggtcaat
agtattagagacgagtcagtcattcaaatcggcgagttcaaccgcagtaacgaagaaa
caactgctacaggtgtatttaattgatttagcaactgctaaaaagcaagaaatataacaa
aacacaaatgcacaaactgaagaaaagcaagtggttttaaatcaagtggatcaagagttta
gcaacggcaatttaataataataatcaagctgatacaaaatgcgggaagtagatcaagcgcaa
caattaggtacaaaagcaatttaatgcgattcagccaaatattgttataaaacacctgcagca
ttagcacaatcaatcagcattataatgctaaattagctgaaatcaatgctacaccagat
gcaacgaatgatgagaaaaatgctgcgataacttttaaatcaagacagacaaacagct
attgaagattataaacaagctaaacacaaatgcagaagtagaccaagctgcagcagtagca
gagaataatatacgtatgctgttcaagttgatgtatgataaaaaacagcagcgcgagataaa
atcactgctgaagtggcgaagcgtattgaagcgtttaaacacacacctaataacgaactgac
gaagaaaagcaggctgctgttaatacaatcaatcaactaaagatcaagcaatttaatacaa
atatacaaaacacaaacaaatgatcaggtagacacaaactacaatcaagcggtaaatgct
atagataatgttgaagctgaagtagtaattaaaccaaaggcaattgcagataattgaaaaa
gctgtttaaagaaaagcaacagcaaatgataatagctcttgattcaacagataatgagaaa
gaagttgcttcacaagcatttagttaaagaaaagaaaagcacttgagctatttgaccaa
gctcaaacgaatagtcaggtgaatcaagcagcaacaaatgggtgatcagcgattaaaaat
attcaacctgaaacaaaagttaaacacagctgcagtgaaaaaatcaatacaaaagcgaat
gaattacgtgtcaagatttaacaggaataaagcaacagcagaagaaagacaagtagca
ctagataaataatgaatttgttaaatcaagccatgacagatattacgaataatagaaca
aatcaacaagtgtgatatacaacagtcgaagcgttgatagcattgcttttagtgacgctt
gaccatattgttagagcagctgctagagatgcagttgaagcaacatataagctaaaaag
cgcaaatttagcaagcggaacatgcgagtagatgaagaaaaacaaagttgcttttaatacaa
ttagcgaataatgaaaaacgtgcattacaaaacatcgatcaagcaatagcggaataatgat
gtgaaacgtgttgaacaaatggcattgtcactaaaaggtgtacaacctcatattgta
attaagcctgaagcacaacaaagcaataaaagcaagtgcaagaaatcaagtagaatcaata
aaagatacaccacatgcaacagttgatgaattagatgaagcgaatcaatttaattagcgac
acactcaaacagcgcaacaaagaaatgaaaaatacaaatcaagatgctgctgttactcgtat
gttgaataatcaaaccaatcaaggcaatagagcaataaaacctaagtaagacgttaaacga
gctgcgcttgatagcattgaagaaaaataaaaaatcaactcgatgcaatccgaataacg
ttggatactactcaagatgaagagatgttgcatttgatacttttaataaaatttgaat
acaattaaaaatgacattgcacaaaacaaacgaatgcagaagtggaatgcgaactgagact
gatggcaacgacaacatcaaaagtgtatttacctaaagttcaagttaaaccagcagcgct
caatctgttgggtgtaaaagcgaagctcaaaatgcactaatcgatacaagcgatttatca
actgaagaaagagactagctgctaaacatttagtagaacaagcatttaacaggtatt
gatcagatcaatcatgcagataagactgcccaagtttaacagatagatataaatgctcaa
aatatttctcaaaaatcaaacagcgcaacagtttaagcaaacgacattacaacaaat
caaaatctcgctacaaaataaaatatttaattaaagcaataacgaagcgacagatgaa
gaacaaaatattgcaatagcacaaagttgaaaaagagtttaattaaagctaaacacaaat

gctagtgacgtgactaatgcagatgtggcatatttattgcatgatgagaaaaacgaatt
cgtgaaatcgaacctgttattaacagaaaggcgtctgctcgagaacaattgacaacatt
ttcaacgataaaaaacaagcaattgaagcgaatttcaagcaacggtagaagaagaatt
agtataattagcacagttacaaaattttatgacactgctattggacaaattgatcaagat
cgtagcaatgcacaagttgataaaacagcatcattaaatctacaaacaatatcatgattta
gatgtacatcctattaaaaagccagatgctgaaaaaacgattaatgatgatcttgcacgc
gtcactgcttttagtgcaaaattatcgaaaagtaagtaatcgtaataaggctgatgcatta
aaagctataactgctttaaaaattacaaatggatgaagaattaaaaacagcagcactaat
gctgatgttgatgcagttttaaaccgatttaattgttgcattaagcgatatagaagcagta
attactgaaaaagaaaatagcttactgcgaattgataaacattgctcaacaaacatatgcg
aaattcaaaagcgatcgcaacaccagaacaattagctaaagttaaagtattaatgatcaa
tatgttgcatggtgcaatagaattgattgatgaagatgacattaaatgacatcaacaa
cacacgcaattcattgttgatgaaattttagcaattaaattaccagctgaagcgacgaaa
gtatcaccaaaaagaattcagccagctccaaaagtttgtacgcctattaaaaagaagag
acacatgaatcgcgcaagttgaaaaagaacttccaaatcacaggttctgaaggatggat
ttaccattgaaagaatttgactgattacaggtgcggctttgttagctagaagacgtact
aaaaacgaaaaagaatca

309.	atgagtggttgaatagaatcaattgaacatgaactagaagaatcaattgcatcattgcga caagcaggcgttaagaattacacctcaagacaagcaatattacgttatttaatttcttca cattactcatccaacagctgatgaattttatcaagcactttcacctgattttccaaatata agtggttgcgacaatatataaataaagagtggtttaaagatatgggaattgtaaaagaa ttaacatatggagactcatcaagtcgattcgactttaatacacataatcatttatcatatt atatgtgaacaattgtgtaagattgttgattttcaatatccacagttaaatgaaattgaa agattagctcagcatatgactgactttgacgtaacacatcatcgaattggaatttatgga gtttgtaagaattgccaagataaa
310.	atgagtgaaaaacaacaaattctcgattatatagaacaaataaatatagttatatcgaa atcagtcataagaattcatgaacgtcctgaacttggtaattgaagaaatatttgcgtctcga actttaatagatcggtttgaaagagcatgattttgaaattgaaacggagattgctgggcat gcaactgggttttatagcgacatatgattcaggacttgacggccagctatagggttttta gcagaatacagatgctttgccaggattgggtcatgcttgggtcataaatcatattggaact gcaagtggttcttggtgcaattgggttgaagcaagtgattgaccaaatgggtggtaagta gtcgttcttggtatgctcagctgaagaagggtggggaaatggtagcgttaaagcttcttat gtcaaggctgggtgattgattcgaatagacattgccttaattgattcattccgggaaatgaa acttataaaacgattgatactttggcagtggtgatttttagatgttaaattttacggaaaa agtgtcctgctctgaaaaatgcagatgaagcgttaaattgcattagacgtatgatttagt tatttttaattgggtgtagcacaactacgacaacatatataaaagatcaacgtgtgcatggt gtgatttttagtaggggaaagcagctaatattattccagactatacacatgctcgtttt tatactagagcaatgacgcgttaagaattggatataattacagaaaaagtaaaatcaaatc gcacgtggagctgcgatacagactgggttggattatgaattttggtcgaattcaaaacggt gtgaattgaattcatataaaacgcgaaattagatgattttatttgcataaatgctgaagaa gttggtgaagcagttattgatgatgattttgggttatggctctacggatcacagggaacgta agtcattgttgggtgccaacaatacatcctcatattaaataggatcacgtaatttttagtagga catacgcataagatttagagaagcggctgcgagtgatcattggtgatgaagcatttaataaa ggcgctaaaaataatggcgttgatggggttagagtttaattacaaatcaagacgtttatcaa gacattattgaagagcatgcccatttgaaggggaattgggaag
311.	atgactacgaccttcatatttagctacattatttttagcgctcattatttgggtgggttctc aatttatttttaataagatcaagaaaaaaggcaaacgcacaacaaaggaaacaacattt acgacacgctcaatcaaatcaatctaaatttaaagctagtgatttagacaaaaaactgat caatcgacacaacgtatgacgcgtgaagagtgctggttgacaatcaagatgatcatagc caagttagcttaaatggttacacaagggtctgagaaaagatcaagaagcattcactaat aataaggtatgaggaagcagttgctgctaaaaatcctgaatcagaagaataaaagtgaat gaaaaataaaaaaagacataaaaaactttatttttgggtgaagggttttcacgcggtaaa atattagcggcatttatttctgggtatgtttatttgcgatttttaaaccaaacattttaa gttgcctttaccaaaaaatataacggaatttaataatttctgcgtcaacagggcaatgggtg atgacgggattcatggttagtaaacgggtatttttaataccaattacggcgatctattttaa aaatattcatatcgaaaattatttttagttggttagtactctttacaatttgggttcat atctgtgcgatttcaatgaatttcccaatcatgattgggtggacgtgattacaagccatt gggtgcaggtgtactaatgccatttaggttcaattgttatttacaatttaccacgtgaa aaacgtggtgctgccatgggtacaatgggtatcgcaatgatttttagcacctgcaattggt ccaacattatcaggttatattgtacaaaattaccattggaattggtatgattttacgggtatg ttcattatcgggattatcgctatttttaattgggtttgtatgggttaagttatatcaatat acaacaacccctaaagctgatatccaggtatcatttttagtagcatggttttgggtgct ttgttatatgggtttctcagaagctggcaacaagggttgggggttcagtagagatagaaca atggttgcgatttgggttatctttatttatttcttattcggttattagagaattaagaatgaa tcaccaatgttgaaatttagaagatttgaatttcccaacatttaccattacaacaattatt aatatggttgtaattgtaagtttatatgggtggtatgattttattacggattttattacaa aatttaccgggatttctcagcatttagattccggattgttattattacctgggttctcctaatt atgggtctactaggaccatttgcaggttaattgttagatactattgggtttaaaccattta gctatctttgggtatttgcgttaattgacttatgcaacatgggaatttaactaaattaaatag gatacaccatataatgacaatcatgggtatctatgacttcgttcatatttgggtatggcattt ataatgatgccaatggttaactgcagctattaatgcgttacccgggacgacttgctctcat ggtaattgctttcttaatacagatgctgcaattagcaggctctataggtagacgaatctta gttactgttaattgacaacacaaactacacacacttatcagcttttggggaagagttagat aaaacgaatcctgtgtgacaagatcatatgcgtgaattagcatcacaatatggcgggacaa gaaggcgcaatgaaagtgttactacaatttgaataaaactagcaacggttgaaggtatt aatgatgatttatagttgcaacgatatttagcatcatcgcttaatttttagtatttattt ttacaagtaataaaaaaagcaaaagctacagctcaaaagttagatgcagataatagtatc aatcatgaa
312.	atgattaaaaataaaatatttaacagcaacttttagcagttggttttaatagcccctttagcc aatccatttatagaattttctaaagcagaaaaataagatagaagatatcgggccaaaggtgca gaaatcatcaaaagaacacagacattactagcaaacgatttagctataactcaaaacatt caatttgattttgttaaaagataaaaaataaacaagatgccttagttgttaagatgcaa ggcttcatttagctctagaacaacatatcagacttaaaaaaatccatatattaaaga atgatatggccatttcaatataatcatcagtttgaacacgaagactctaatgttgattta attaattatcttccataaaaaataaattgattcagcagatggttagtcagaaattaggctat aatacggcggaacttccaatcagcgccatcaatcggaggcagtggtcattcaactac tctaaaacaatttagttataatcaaaaaaactatgttactgaagtagaaggtcagaactct aaaggtgttaaatggggagtgaaagcaattcattcggttacaccgaattggtcaagtatct gcataatgataactattttgcacaagaccaactgggtccagcagcagagactatttcc gtccagataatcaactacctccttatttcaaaagtggtttaaattccattcattattaca acattgtcacacgaaagaggtaaaggtgataaaagcaggtttgaaatcacttacggcaga aacatggatgctacatgcttactgtgacaagacatcggttagccgttgtagaaaaacat gatgcttttaaaaaccgaaacggttacagtttaaatatgaagtgaactggaaaaacatgaa gtaaaaattaaaagcatcacacctaag

313.	atgcaatcaacgaaacaaacgaagcatttttcattttatttgctaattacggttaggc gtcatgaccgcttttggccactaactatagatatgtacgtaccatcatcactaaagt caaggtgattttgggtctactacatcagaaattcaattacattatcatcacaatgatt ggctctgcaactaggccaatttatctttggacctttatccgatgcttttggcgcaaacgg attgctgtatccattttgatcattttcattttgggtatcagggttgcctatgtttgtgat caattgccattattcttaactttacgatttttcaaggttttaactgggtggcgctc gtgatggcaaaagcctctgctggtgataaatttagtggaacgcaactcgttaattttta gcactcttaattggtagttaatggcatcatcactattcttgacccattagccggtgatta gctttatccgtagcaacatggcggttctattttcacaatttttaactattgtggcactcatc atttaattggcgctgcttctcaattacctaacaacatctaaagatgaattaaagcagggtg aatttttagtagcgtcattaaagattttggaagctctttgaaaaaacagcatttattatt ccaattgctattacaaggtttaactttatgtaagctatttagttattcatctgcatcgcca tttattactcaaaaattgtataatgatgacaccccaacaatttagtatcatgtttgctggt aacggtgttaggtttaatcatgtcagtcgaagctgctgtttatttagtagaaaaattacat ttgcaacaaaatcaactcatccaattagaagaatgggtgcacatggttggcggttggg gaacaagaaaagaaagaaatgtatgatttgcgactgagtttagagtcatttgcattttca agagttaaaaatcaagagcgactacctaactgtaaaagaatgaagaacaactgaaatg atgaaagtggcagtaaaaattttaggatgcagaatcatttaccgaagcatgactttgaatt catgaacatttaataaagcatcattatcatcaatatttaactcattttggagtcattta aaaccagtaaatgtaggcaactcgttttaacatccatgcgacaacgtatgcaacagaacccg caagattttgaacgcatacatcataatcatcaagtggttattgtagcagtggaacaatac gacagtcataattttgaagaagcgtttcatttaaatctgcagatgttggtaagaatatt gaaggatttttggttgaat
314.	atgatgtatggatatccagagaatgggttgaaggatgacaactggagaaggatcgcg gcagaattacgcttaggcatttgtaagtggtcacatagctgaaggtagcttactcactgaa aatcaaatggcaagcaattttaatgtgagtcgttgcgaatttcgagatgcatttaaat ttgcaacaaaatcaactcatccaattagaagaatgggtgcacatggttggcggttggg gaacaagaaaagaaagaaatgtatgatttgcgactgagtttagagtcatttgcattttca agagttaaaaatcaagagcgactacctaactgtaaaagaatgaagaacaactgaaatg atgaaagtggcagtaaaaattttaggatgcagaatcatttaccgaagcatgactttgaatt catgaacatttaataaagcatcattatcatcaatatttaactcattttggagtcattta aaaccagtaaatgtaggcaactcgttttaacatccatgcgacaacgtatgcaacagaacccg caagattttgaacgcatacatcataatcatcaagtggttattgtagcagtggaacaatac gacagtcataattttgaagaagcgtttcatttaaatctgcagatgttggtaagaatatt gaaggatttttggttgaat
315.	atgggaagtttttcaataaaatagcacgaaagaggatccggctatctcaaaaataa gatgggtcattttaaagcgtacacttcgggtgcgtgatttcttagctttaggtgtaggaaca attgtatcgacatctatctttacgctacctggcattgttgcgcagaacatgcaggaccg ccggttgcgttatcattcttactcgtgctattgttgcgtggttttagttgcatttacttat gcagaatggctggcgtatgccatttgcaggttcagcctattcttgggtcaatgtatta tttgggtgaatttttggatgggttgcgggttgggctctattagctgaatttttatcgcc gtagcctttgttgcacaggatttctcagcgaatttaccgggaatttggtaaaccaatttggc atcgaattacctgcagcatttatcaaatccatttgggtacaaatggcgggttttatcgatatt attgtcgtatcggttatttttaaactgcatttactatcacgtggtatgtcgggaagca gctcgtatggaaaatattttagttattttaaagatttagctattattttatttgcctc tagggttaacagcaataaattttagttaactatgtgcccatttatccagaacacaaagta actgtacaggtgacttttgggtggatggcaaggcatatagctgggtttcaatgattttc ttagcgtatattcgtttcgattctatcgagcaaacacagagaagcacttgatctcaa aagcaatgcctagaggtattcttgggttctttaaagcgttgcctatcgattatttattgct gtagcacttgggttagttggtatgttccattactcacaatacgcgaacaaatgctgaacct gttgggtggccttaccgtcaagtggtcatggtgtttagcagctattgttcaagctatc tctgttatcgggtattttacagcatttaattgggtatgatttagcaggctcacgtttactt tattcatttggacgtgacggcttattaccttcatgggttaagccatttaaacgacaacat ttaccatctgcgcactagttatcttactattatttgggtttttaaattgggttctatgttc ccattcgcatttttagcacaatttaattcagcaggtacacttgttgcatttattgttcgtt tcatttagcaatgtatcgttttgagaaagcgtgaaggtaagaatctaccaattcctgcattt aaattacctttatattcctgtgttaccagcaattacatttgggttttagtattgctagattc tggggattaggattcgaagcgaattatacactttaatttgggttattgttgggtatc ctatttttaagttatggacttagacatttcaagaaaatgacgtagctgaataccacca ccaaa
316.	atgaatagtgataatatttggttaacagtaattggggctcattattattttcaattgta ggtttactcatttgcacaaaagataaaatccagttgtaggtatgacaatcatcattgctta ggggcaatgatttttaggatattagtgtagcagatttgggtggatttttgcataaagggtta gatcaagtcataacggttgttattatgtttatctttgccattattttctttggcatcatg aacgatagtggtttattcaagcgcgttgcacaaagcgttaatttaattgacacgaggcaat gtcgtcatgtctgtgcaatgacagctttaaattggcacaatagcccaatttagatggggcc gggtcggttaacattttgctttctatctcgtcatttatcctttatataaagcgtttaa atgaataaaatatttattgattttactattagcattaaagcgcggcattatgaacatggt ccttggggagggtccaatggctcgtgtagctgcagtggttaaaagcacaaggtgcaatgaa ttatgggtatggattaatcctattcaataaattaggttccattcttctgttattgttggc gtatattcttggatttaaagaacagaaacgtatcaaaaagcaatagagagaatgaatta ccgcaaacacagatatagatgtacataaatttagttgaagtatatgaacgagatcaagat gtaaggttttctgtaaaaggacgtgcaagaacaaaatcatggataaaatgggtgaatata gcttttaacttttagctgttattctatcgatgttaataaatttggcccaactgaatttgc ttcatgattaggtgttctgttggcacttgttatttaattttaaactcagtggtgaacaaatg gaacgattagagcgcagtcgcccgaatgcatttaattgattggctgcagtgattattgcagca ggtattgttttaggtgtactaaatgaacgggtatgtttaaagcagattgcgaccaattta atcaagtgatttctgcagaagtaggaccatacttgcattattttagtggtttacttggc gtaccatttagatttactaactagcacagacgcttattatttgcgtgttaccgatgtc gaacaaacagcagggaatttgggtgacgctcgttatcaacagcttattcaatgggtcata gggaattatattaggtacatttgcagccattttaccagccttattggttggcgaattggt ttagcagaggcaacatgggcagctatttaagtagtgcattcttttggatttggggattc gctatcgttatcgttagtaattgcaatggttagtgggcatttgcagatt

317.	atggaaaaacacgggttaaatatcgtaagtttatactccctatcggttaggtctccttatt tgggcacttacaccttttaaacgggatgcttggatccaacagcatgggtatagtctgca atattcgtcgcaaatcattgcttggattacacacacgatgccaatggggcggtctct ataatttggatttacaatcatggtactcgttggcattggtgacatgaaacggcgctgct gggttttggtaataatagcatttgggttaattgctatggcatttttcatctcgagaggattt gtgaaaaacaggcttctgtagacgtatcgacattcatttctgcaaatatttggtaaaaaa acattaggattagcatattctatcggtgtagatttaattctagcgctgctacacca agtaataccggcggtgctgggtggaatcatgttcccaattatcaaatcactttctgaa tttgggttccgaacggaaagcggatcagcagcaaaatgggtgcatcttctgttttcaca gaattcccaaggtaatttaattactcgggtatgttttaactgcaatggcggttaacccc cttgcaaaaatttagcatctagcacatctaatttccacattacatggatgaattgggtt ctagctgctttagtttctggactgttttcttaattgtgtacctttattattataaaa atttatccaccaactgttaaagaacaccaaattgctaagagtgggctgaaatgaatt ggcactatgggttaaaatcgctttagctgaaatattatgattgggtatttttctgctg ttaacactatggatttctggaagtttcattcatattgaggaactttaacggccttatt cgcttagcattgttattttagcagggcttcttaacatggcaagacattttaacgaaaca gggtcttggaaacacatttagtatgggttctcagttattgtttaaaggcgacaaataaac aagcttggatttattcttgggttaagtaaatccatttgctacaagcttgggtggcttaagc tggcctatagtcctggctcattttaatttcttactcttattcactacttatttggca agttctcagcacatatcagtgcatgtatgcagcattactaggcgttggcctcagcgc gggtgaccaccatttattcagtgcatattttaggtttcttctggtaacctatttagcttca acaacacactatagtagtgggtccagcggatttcttctcaggtttagtgactcaa aaacgttgggtgacaatgaacttaatttaggttctgctactttattatctggattgggt ttaggatcacttggatgaaagtaattgggtatattt
318.	atgaataaagtaattaaaaatgcttgggttgcgttgccttctacttgggttagcagga tgtagtgggaattcaataaaacaatcatctgataaacaagataaggaaacaacttcaatt aaacatgcaatgggtacaaactgaaattaaagggaaccaaagcggttggtagctatata caaggtgccaactgacgtcgctgtatctttaggtgttaaacctgtagggtgctgtagaatca tggacacaaaaacggaattcgaataacataaaaaatgatttaaaagataactaagattgta ggctcaagaacctgcacctaacttagaggaaatcttaaattaaaacgggacttaattgct cgctcaaaagttagaaatgaaaaagttacgatcaattatctaaatcgcaacacaggtt tctcatgacaggttttcaaatcaaaagatacaactaagtttaattgggaaagctttaggg aaagaaaaagaagctgaagatttacttaaaagtagcatgataaagtagctgcatccaa aaagatgcacaaagcaagataaaagtagcatggccattgaaagctttagttgtaacttc cgtgctgacatataagaatttatgctgggtggtatgctgggtgaaatcttaaatgattta ggattcaaacgtaataaagacttcaaaaaacaagttgataatggtaagatattatccaa cttactatcaaaagacatttccattaatgaacgctgacatattttttagtagtaaaatca gatcacaatgcgaaagatgtgcatttagtttaaaagactgaaagcgaaatggacttcaagt aaagagtggaataatttagacgcaggttaaaacaaccaagtatctgatgatttagatgaa atcacttggaaacttagctggcggtataaatcttcaataaaacttattgacgatttatat gaaaggttaaatattgaaaaacaatcaaaa
319.	atgattaatcagtcctatatggcgagtaactttcgcattttatggctcagtcagtttata gcgatttgcgtgactgcagctacttctgcccatttatggcaatttatatggcatcactacaa aatctcatcagtcgtagaataacagtttggagtggtatagcgatttgcgtccagctgta acgacgatgatagcttccgcatatgggggaagctaggtgataagatcagccgaaatgg atgggtttaaagagcgttacttgggttggcggtatgcttatttttaattggcattgtgtacg acaccattacagtttctacttggaggttattgacgggactatttgggtggttgggtgat gcattcaagtgcgttctgcagtgacagggcgccagctgaagatcgtggaaaggtatttagga agactgcacaaagttagtcagcgcaggggtctcttgggggcatataattggcggtgttaca gcttcgatattagggttttagtgcttactgatgagttatggcgttattacttttattgct tgtattttcgggtgcattaaaattgattgaaacgacacatatgccaaaatcacaaacacca aatattataaaaggtattcgccgttcatctcaatgtctattatgcacacacaaacatgt cgatttatctcgttggcggttttagcaactttgctatgtaggcatgctaactgcattta tcaccacttgcctcatcagtgaaatcatagcagcatagatgacagtagtggtgattggattt ttacagtcgcattttggacgggttcgatattaaagcgcgcctttatggggagcgtttaat gataaatcatatgttaaatcagtatatatatttgcacgattgcatggtttagtggtg atctgcaggttttagcgcgaatataagatttttaacggctgcaagaatacttcaagga ttaacatatagtcgattgattcaaaagtgcagtttgggtgctgtaattgcgtgcatcaa caacttaaggcacatttgggtggaacgacgaacagtagtttagttggttgggtcaaatatt ggcagtccttagtggcgctgcatatacaggttatatacaccagctactacgtttatcgtt atgggcgttagtttgcagtaagtagtttatttttaatttgggtcaaccatcactaatcaa atcaacgatcacacatttaataaatttgggagttgaaacaaaaaagtgcaaaa
320.	atgaagcgattatcgatgtagtgagttcaatataatgggttagtagttttaagtcggatt ctgttaattacagcattactaattaaaatggaaatcacctggaccagccattttcaaaaca aaaagaccgacgatttaataatgaattgttttaatttttaagtttagatcaatgaaaaa gacacacctaattgtgcaactgatttaattgattcaacatcgtatataacaaagacaggg aaggtcattcgttaagacctctattgatgaattgcacaaatttagaattgttttaaaagga gaaatgtcaattttaggtcctagaccagcgctttataatcaatacgaatttaactcgaaaa cgtacaaaagcgaacgtgcatacagattagaccaggtgtgacaggacttagctcaagtgatg gggagagatgatcactgatgatcaaaaagtagcgtagatcattattactttaacacat caattctatgctttagatgtatcatatataaaaacaattaaaaatatcgttacttca gaaggtgtgcatcac

321.	atggcacaacttaattcaaagatagcttccctaaattatttcgcaagttacgccatagca acttataatttttagttatatataacgagtgacattaaatctttttaaagggtatgtggccgat acgttcttatatttgctgaacattgctaaatcggttttaaccatcattttaatttatatttta acaacgggaacaacatggaagcatcatgacctatggcgacgtatcgtagaagtggtgta ttgttgatgacattaaacaggcaacgtatttacattataatgtttgtaagttatgacgt taccacgtacatcgcaaatacatagttataacgggtgggaatcggtttacgaaaaact actagacatcgattcgcatattcggttacttatttttagctacatgctgacattatca atttggtcacaaattacatttgatacagacattggctactaaaaatcagttcaatgcactg ttacatggaccgagtgctagcctatccgttttggtactgatgatttcggtagagacttatt acacgcgtagttgtaggaacgaagctgacattttcaatttcaattatttcagtagttatt gcagttatttttggtggttactaggcactatcgaggttattttaatcatattgataat ttaaataatcgcaatttagatgtagtgtttgcaattccatcattattgttagcgggtggca attattgcatcattttggagcaagttattccaaatttaattattgctttaagtatcggtaat ataccatcattttgcacgggacaatgcgtgcccagtggttttagaaattaaacgcattggaat tagatggcagcagtgatcactggtgaaaaacattggaatatcatatggcggttatatttta ccgaatgcgatttgcgcctatgattgtacgtttttcattaaatcataggtgtggttgattta acaacaagtagtttaagtttccctaggacttggtgttgacccgtgtagtgcagtaagtgggc aacattttacgtaccggttagtaacttcttggaacgcacagtaatttagctattgtacct ggtgtttgtattatgttcgtcggttttagcatttaattttataggtgtagcagtgctgat gcactagatcccaagaattcat
322.	atgaaaaacaatcatttggttcgcatctaccactctttttatttgaaaaagtggtatttg aatttaattttactattttatattagcggcactccttattacattaacgacaatccaact gtacagaagatgacaatcatttttaatataggtgtcgtagataaagatcaatcaagtga acgaatttaattttaaactctatttggtaaagggagtaacctaggaataaacgtagcatt aaagcatatgatgataagcaagcacatactttgttaaaaaacataaaacttcaaggctat ttgttttttgataaaaggtatgaccaaggcattttataaaacaaaggcgaactaccaatttca gtatacatatgatcaacaatccatgaaaagtgctgctatctcagctaacagattct gtttaccacgtcttatgcgatcaatgggtggcactcttagcttttcaagacttagcaccg aaagcatcaactctgacagtatcaatgttatgactgatttgctgattacaggattaaac cggtcaggtgcattttaacttagaaccgattcattttatagcatacgggcagttattatgca attacaggtatttttaacaacggtatttcatctttgcactatctttatttacagttttgaaa atgaatcaagatactgtattgaaagcgcgattgaaaatgtttcatttttcaaaagacgt ttatttaattcattcgtagttgattacatggttttatactatgatttgaggtatcggtggg tagtatttggtattgttccagtattccgaatatcttgaattatataattggccaacgtta gccatttcaatttaagctattatgttacctttttaaactctgtggttattactcatcgaaact ttaacaacagggtgttgtaatatgtattagtaaaagtcataattagctattgtcatcctggg ttatctgttttaacaatacctacgatttttttacaacatataagcaaatgggttttcaat attcaacggttcgcagttgttaacaaatcaattgttagaaattattttaacaactacatt ttagaactgcaccttagtttctatcttagcttcatcgcaacttttgataaatttaatttagct gtattgggttttgaggtatcgtcaa
323.	ttgaaaaacaagttattatttcgggacctatgttatttttactattttttggagccgga aatttaattatcccccccatgcttggccatcacagcgggtcaaaatatgtggtattggtatg ctaggtcttggcccttacaggcatattactcccttttactggttattgttggtagcttt tagatgaaggtgttgaaagttaggcaatcgtagatccatcggttcgggttattttt gctgtcggtattacatgtctatcgagcattttacggtattccacgtgctgcaaatgctc gcgtacgaatttggtagaagacacattttacgtgtgcataaccaatggactttaattata ttcgagcaaatctttttgccatcggttactggatttagtttaattccatcgaaaaatcggt gataattttaggttaatttataacacggttattactattaatggctgctctattaagatt gctgtcattttcaacccgtgaatctgcactaaagtgcacctaaggataaaatatataacacat cctttcatttcaggaaagtttggaaggcattttacaatggatctgttgcgtcggttagct ttttccgttagcttgcattgcataagtttlaaaggcctcacagatcgcatgaaatt ttaaaatatgtctgcttttcaggctctatttcagcccatattacttggaaatgatttacttt gcacttgcatagcttggggcatcaacagctccaggaaactttaaaagatggtagagata ttgacgtacaactcattacgattatttgggtcggttcggtaacctcgattttggaatgacg gttatccttgcatgccttaacaacatgtataggactcgtaacgttgcgcacatttact aagaacacgtagcttaagttttcttataaaattatcgcaacttattttctctatcataggg ttctatttacaacacttgggttagaattgattttaaaatttgcgtgccattattgact ttaatatcccggtgtcgattgcacttgcactcatatcatttgcataacatgttagcaca ttcagattcagttgggcttatcgactcgcaactgttattacattgatttttcaatttta caaatcactaaatagtttcaacttattacacggtgttattttgaaatcggttatgatgtta cctttagcagatcagatttagcttggcttgaccattcatgctcttgcatttatcggt ttcataatcgatgtattttatagcgcgtccgaaacagcgacaact
324.	gtgaaacattatttgactaaaatttgtagcaatgctaataactgctgctatggcgtgtagc tttgggttactgaaaagtcaggcagcagaacaacaaagtatttagtgatgatatagtg ataacggatgcaaatctgcacttttcaataatcgatattcgaaatgacaataagcagaaa gcaatttgagcaagtggttaagtgagtttaagaaattatcgcttgaagataatagtgaaagt aatgctgtcaaatcagatgtgagaaagcttgaagatgcaaaagcgaatgatacaaaaa gatacactttcgcaattaacgaagtcatttaattgcttatgaagagaattggcgtagttaa gatgcccgttctaaaattaaactattgcaacagcagtcgattgctaaagatgctgcatg acaaaagcgattaaagataaaaaataagcgggaattagaatctttgaaacaatagtttgaat cagattttggacaagttaataacagtgatttcgcaatttagacgcaaatcaataaggacaa attgaagtcgcatatttacaacttagaattgcaattcataagtcaccatttagatagcga aaagtgtcacatgcttggacaacttttaaatcaaatattgatcatgctcgataaaaaaagt aatacgtctgcaaatgatcaataccatgtatcacaattaaatgatgcgttagagaaggcg attaaagctatcgacgacaatcaattgtcggtatgctgctgcttaccattttata gaaacttggccgtatgttgagggtcaaatcaaaactaaagacgggtgctttgtatagcaaa attgaagataaaaataccatattatcaaggtgtatttagacgaacataataaagcacatgtg aaagattggttttagtagattttaaataaccaaattaaagagggttgggtggcatttagc ttcgtcgatgtgatgtattctttttagcgtgaagggttagaaggtgttgaattgttaagt acattgactaccatgacgcgttaagttaaagataaagaaagggaactgcaagtgtgattggt ggtgcaattgcccgaacttgcgtgagttatttcttagcaattacggtttgtagaacttta gggaatagtggaattcttcgtgaaagtatggaagcgggattaggatcgttgcggtcata ttaattgtttatcggtgggtttggatgcacaacggttcaaatgcaaaacggttgaatgac atgatttaaaatatgtatgctaatgcgatttagtaattggttaatttggattgttagcgacg attggttttaatatctgtgttgcgtgaagggtgcaggttattcattttctataggggtag ataggtgagctagcgaccaagattttattattggtattgcttttagctatcggtatttta atcactttgcatattatttagatttagtttaatttaataacattttctatataatt agagtggttgcgactcttatttttattatgggattcaaaatgcttggcgtaagtattcaa aagttaacattattaggtgcgattgcaagacatgttattgaaggattcccaacgattaac tggttgggcttttccaagttatgaaccattgtagcacaagggtgcttatattatggtta gttgcctatcttaattttaaatttaaaaaa

325.	mnkqifvlyfniflilfllgiglvipvlpyvldkldgtsgdglvllaafalsqmiispfggt ladklgkklilicigllfsvsefmavghnfvmlsrvggmsagmvmpgvgtgliadis pshgkaknfgymalinsgfilpggiggfmaevshmpfyfagalglafimsivlihd kksstsgfgklepqltkinwkvftipviltvlvlsfglsafetlysytdadvknyvspkdi siaitgffgalftqiyffdkfmyfsetfiawsllysvvllilvlfandywsimlisf vffigfdmirpaitnyfsniagerqgfgaglnstftsmgnfigpliagalfdvhieapiy maigvslagvvivliekqhraklkeqnm
326.	mlfylvfhftisfistvlfslifnapkrllvacgfvgaiawtiyqltvdlfegkvgasflg sliiglmshtmsrrykrpviiifivpgiipvpqgaayqatrfvlsndytsavntflevtl isgaiafgilvseilylylytrikqlygkikgktykksynmnr
327.	minavviavilmimlclcrlnvvislifisalvgglisgmsiekvinvfgknivdgaeval syallggfaalisysgitdylvgkiinahaensrwsrvkvvtiiallamsimsqnl pvhikafipivipplslfndlkidrrlliglligfclcfpyvllpygfgqifqqliqsgfa kanhpiefnmiwkamlipsmgvylglliglyvyrkpreyetrkisdndvntelkpyiliv tivailatflvgtftdsmlfgalagvlvffisraynwyladakfvogikimayigvilt angfagvmatgddidelvktltsitgdnklfsimnyviglivtligssfatipiasl fipfgasigldtmalialigtasalgdsgspasdstlgptaglnvdgqhdhirdtcvpng lfyniplmifgtiaamvl
328.	mnhvvilvialilvvismlamlirvvlgspladrvaldaiglqlmavialfslilniky mivvimmigilaflgtavfskfmkgkviehqdntd
329.	mnriivklvfmlllvavagcgqkdeekteemttikdelgtekkknprvvleysfa dylaaldmkgvviaddgstknitksvrkdigayesvgsrqpnmnevisklkpdliiadvs rvhikafipivipplslfndlkidrrlliglligfclcfpyvllpygfgqifqqliqsgfa kanhpiefnmiwkamlipsmgvylglliglyvyrkpreyetrkisdndvntelkpyiliv tivailatflvgtftdsmlfgalagvlvffisraynwyladakfvogikimayigvilt angfagvmatgddidelvktltsitgdnklfsimnyviglivtligssfatipiasl fipfgasigldtmalialigtasalgdsgspasdstlgptaglnvdgqhdhirdtcvpng lfyniplmifgtiaamvl
330.	mtgeqftqlkrpvsrltekvlgwlcwvmlvltvltmfiavlsfnsntsiantlentlenn atfigqlagngynttqfviwlgngiawilvfyvcllisflalismsnirilsgflfisa ivtipvlvliivtliipilffiiamllfirkdkvemvapyeyeyngpiydyrepvyerpq pkddydvpykkelkdsntvydqeqrkydqfpraveseynderteeepsvlsrqa pkqkseteelgieddyayaepevdpkelkagqkrekaekakkkekrkayngmkerkn qpsavsqrmfeerrqlynnidiseernssevdkkege
331.	mentinesekkrfkklmpgaamilfultvaviatwvipagaysklsyepssqelkivn phnqvkkvpgtqgldmkgvikiieqfksaginkpvsipntyerkqhpaggeqitssmv egtieavdimvfilvlggligvvgasgsfsgllaltkktkghfmlivfvsilmliggt lciieeavafypilvpiialgydsivsvgai flassvgstfstinpfsvviasnaagt tftdglvrigacivgai fvislywyckkikndpkasyedkdafeqqwsvlkddds hftlrkklitlflvlpfpmvwmvgmtggwfpvmasafliftiimfiagtgsqglgek tvdafvngasslvgsliiglarginlvnmgmsidtilhfssslvqhmsqplfiivllf iffclgfiyvpssglavlsmplfapladviprfvitytyqfgyamlflaptglvmt lqmlnmryshwfrfvwvavfvlifgggvlitqvliys
332.	msffkrlkdkfatnkeneevkslteegqgdkledthsegstgdandlaenaevkkprkl seadfdldglisiedfeieagkmgakfkagleksgnqfegqllnliaryrkvdedflea leemiltadvgnfntvmtl teelmeaqrrnigtetdrevivekiveiyhgeddnseamn ledgrlnvilmvgvngvgktttigklayryknegkkvmlaagdtfragaiddqlkvwger vgsvisqsegsdpaavmydaanaakngvdlidctagrlqntknlmgelekvrvinra vpdpheallclldattgqnlsgarnfkevtntvgivltklldgtakggvialrnelhip vkyvllqgldldlqpfnpesyyvylfadmieqneittvendqivteekddnhsks
333.	mlkkwlnsvkvqffvitfifsviltlilfsthiydivngtvsfsgagdgfrqmpmfqmyly ehlrssfslydasfllgdyngklsyysylsplmwnlflfikigetvgnfnttihfwp nqlinamiraiitfvvtfylvfkiilhfksanmiatilygmstvvlyfntfwsfygnllyl lplsilgleryfqqrkigifivaialtlfnsfyfsyqaiigcylyrlyfitykydivs rtqklivcisatvsvlssvfglftgisafleindrknqnpndipfltpldyhyfffsdgf yititsiltvallsfkllyrfyfyrlfaivtwilfigslsqyfdasfngfsfperrwyil alsssalcglfihlsltnmkyyllrtipvciaailyllsptbplaliigvillilvav ilkfslwrykklvtailvlivmiqqivildnnknmaikpyqgsstlklqhdysnyvngl ikknqnatgsfnridysdyaalnsfpflynhyngislyssi fngdilkyydktlqinmpid knstyrllgnrqnlslslwvndrirvnhddnlpvgfkiksehkdnkvrvlwhskntihyps ahitnkvfsnkelkspldkeqamlggivsnnikdvntthfkanllsdsstiklnsaawgs ptkhlilqvgqnggltvqlpksvsnqfkdlyfemdlellspdkahdvkvneytqernklt ykyrrvvtpvtirikapdrirlslpkgyrvnlkgiyyedyttlkdasnsleavkvsktk hgytitknkssgyivlptayngmksatgsdqslkveqngvmtgikapknitkiqlyst pvyvylitititifiicssliiftrwarqk
334.	mrqlaqakkkstakkkttskrtnsrkkmdnpiyviaailvvvlmvgvqlgiigrli dsffnylfgysryltyilvllatgfityskripktrrtagsivlqiallfvsglvfhfns gikaerepvlsvyqsyqshfnpnfgggvlgfylllelsvplislfgvciiitillcsvg lltnhqhrevakvalenikawfgsfnekmsernqekqlkreekarlkeeqkarneqpgi kdvsdfttevpqerdiplyghtenesksqsgpsrkrvfdasnsnnivnhhqadqgeqlt eqthnsvesentieeagevtnsvsvvpltlngnqpkqatskaevqrkgqvleltlkdf gvnaktvqikigpavtqyeiqpaqgvkvskivnlhndialalaakdvrieapipgrsavg ievnpkislsvlkevldekfpsnnklevgldisgdpitvplnephlllvagstgsgk svcingiitsillnakphevklmlidpkmvlnvnygiphlipvtnphkaalekiv aemerrydlfghsstnikgynelirkqngeldeqkelpyivvdeladlmvavge enaigrigtmaragihlivatqrpsvdtvgiiknipsriaafavssqtdsrtiigtgg aekllgdmlyvngdssqtriqgafldsqevqdvnyvveqqqanyvkemepdapvdk semksedalydeaylfvveqqkastsllqrqfrigynrasrlmddlernqvigpqkgskp rgvldlndev
335.	maeklqrelsnrhiqliaiggaigtglflgagqtlaltgpsiilltyiigfmlfmfmr geiiligtetfksfadvtntyigpfagfvtgwtwfcwiltgmaevtavakysvfwfpeip nwisalfcvlllmsfnllsarlfgelefwslikiatiigllivvgfvmilfafktqfgha sftnllyehgikfakgasgffmsfmalfsfvgiemigtvagetkdpvktipkainsvp liffygalavimsipwqqvdpdnspfvklfaliigipfaaglinfvvlttaasscngif snsmlfllssqqqappnfsktnkygvphvaifassallvaallnyifpdatkvftvyt tistvflvvggllilayinyrsknpdlhknatyklggkymgyllfvffifvfgllfin vdrtraiyfiwfillafmylrykraaksnk

336.	<p> mnlkknkysirkykvigfstligtvlllspnngaqaalttdnnvqsdtnqatpvnssqdkd vannrglansagntpnqsattngatnqalvnhnngsi vngatpssvqss tpsaqnnhtd gnttatetvsnannndvsnntalnvpktknengsgghltlkeiqedvrhssnkpelvai aepasnrpkrrsraapadnatpadpaaavnggpegvaitapytpttdpnannagqna pnevlfsddngirpstrnsrvptvmvnnlpgftlingkvqvfshamvrtsmfsgdnkn yqaaggnvialgrihgtdtdndhgdngiekaltvnpnselifeftmttkngggatnviik nadndtiaektveggptlrlfkvpdnvrnlkiqfvpkndaitdargiyqldgkykysf vdsiglshsgshvfverrtmdptatnnkeftvttslknngnsgasldtndfvyqqlpegv eyvnnsltkdfpsnsgvndmnmvtydaanrvitiktsgggatansparlmpdkildlry klrvnnvptprtvtfneltkytytqdfinsaaeshvstnpytidiimnkdaigaevdr riqqadyt fasldi fnglkrraqtildenrmvplnkrvsgayidsltngmqhtlirsvd aenavnkkvdqmedlvnqndeltdeekqaaigvieehkneignigdggtddgvtrikdg gigtlsqgdtpvvpknakkairdkatkqreinatpvdteidqdalnqlatdetdaid nvtntatnadvetakngintigavvpqvtthkkaardaingatatkrrqginsnreatgee knaalneltqatnhaleqinqattnadvdnakgdglainiapvtvkvqaardavshda qghiaeinanpdatgeerqaaidkvnaavtaantnl nantnadvegvtknaiaggigait pakvktkdaknaidsaetqhtifnmdatleegqaaqglldqavatakninaadntng evagakdggtqniivvipatgvkttdtrnvndkarealttninatgatreekqeaivrnt tlknraltdigvsttamtvnrsirddavnqigavqphvtkkqtatgvindlatakkgeing ntnatteekqvalnqvqdelatanninqadtnaevdqagqglgtkainaiqpniivkppaa laqinghynaklaeinatpdatndeknaaintlnqdrqgaiesikgantnaevdqaatva ennidavqdvkvkqaardkitaeavakrieavkqtpnatdeekqaavnglnqldqainq inmqntndqvdttnqavnaidnveavvikipkaiaidiekavkekqqgidsldstdek evasgalakekelaaidqagtnsqvngaatngvsaikiipetkvpkpaarekinqkan elrakingdkeataeerqvaldkinefvngamtditnnrtngqvddttsqaldsialvtp dhivraaardavkqyeakkreieqaehatdeekqvalnqlannekralqndigaiannnd vkrvteyngiatlkgvqphivikpeaqqakasaenqvesikdtpatvdelddeanglied tlkqaggeientnqdaavtdvznqtikalieqikpvrrkraaldsieennknqldairnt ldttqgderdaiddlnkivntikndiaqknnaevdrtetdgnndikvilpkvqvppaar qsvgvkaeaqnalidqsdlsteeerlaakhlvegalnqaidqinhadktaqvngdsinaq niiskipattvkatallqgigniatnkinlikanneatdeeqniaiaqvkelikakqqi asavtnadvayllhdekneireiepvnrkasareqlttlfndkkqaleaniqatveern silaqlqniydttaiggidqdrsnagvdktaslnlqitdhldvhpikpdaektinddlar vtalvgnyrvksnrnkadalkaitalklqmdelktartnadvdavlkrfnvalsdieav itekensllridniagqtyakfkaiatpeqlakvkvldqyvadgmrmidedatlnidkq htqfivdeilaiklpaeatkvspkeiqpapkvtcpikkeethesrkvekelptngsegmd lpkefalitgaallarrtrtknekes </p>
337.	<p> msveiesieheleesiaslrqagvritpqrqailrylisshtpadeiyqalspdfpni svatiynnlrvfkdigivkeltygdsssrfdfnthnhyhiiceqcgkivdfqypqlneie rlaqhmtddfvthhrmeiyygvckecqdk </p>
338.	<p> msekgqildyietnkysyieishriherpelgneefasrtlidrlkehdfeieteiaigh atgfiaetydsgldgpaigflaeydalpglghacghniigtasvlgaglkqvdiqiggkv vvlgcpeaeggengsakasyvkagvidqidialmihpgmetyktidtlavdvldvkfygk sahasenadealnaldami syfngvaqlrqhikkdgrvhgvildggkaaniipdytharf ytramrkelidilteknvniargaaigtgcyefgriqngvmeifiktppklddlfakyaee vgeaviddffgygstdtgnvshvptihphikigsmnlvgththrfreaaasvhgdealik gakimalmglelitngdvvgdiieeahlkgngk </p>
339.	<p> mttftiisylialaliivgvini flirsrkkgkrqqkeqgfttrqsnqskfkasldlkttd qstqrmtheelrvdnqddhsqvslnqytkgsekdgfaftnnkdeevaaknpeseeekvn ekikkehknfifgegvsvrgkilaallfgmfialnqtllnvalpkintefnisastgqwl mtgfmnlvngilipitaylfnkysyrklflivalvftigslcalismfpmmvgrvlgai gagvlmpigsivitiipypekrgaamgtmgiamilapaigptlsgyivqnyhwnvmfygm fiigilaailgfvwfklyqytnpkadipgiifstigfgallygfseagnkgwgsveiet mfaigiiifiilfvirelrmkspmlnlevlkfptftltiinmvmlslyggmllpiyl nlrgfsaldsglllpgslimgllpgfagklditiglkplafgiavmtvatwltklnm dtpymtimgiyvlrsfgmafimmomvtaainalpgrlashgnafntmrqlagsigtail vtvmttqtqhlhsafgeeldktnpvpvqdmhrelasqvgggegankvllqfvnklatvegi ndafivatifsialilclfiqsnkkakataqkldadnsinhe </p>
340.	<p> mknkiltatlavgliaplantpfieiskaenkieidigggaeiikrtqtditskrlaitqni qdfdvkdckynkdalvkmqgfissrttysdlkkypikrmiwfpqynislktkdsndvl inylpknkidsadvsklgyniggnfgsapsigsgsgsfnyksktsynqknvtevesqns kgvkwgvkansfvtpngqvsaydqylfaqdptgpaardyfvpdnqlppliqsgfnpsfit tshergkgdksefeitygrnmdayayvtrhrlavdrkhdfakmrvntvkyevnwktthe vkiksitpk </p>
341.	<p> mqstktktkhfsfllliltlgvmtafgpltidmyvpslpkvqgdfgsttseiqtlsftmi glalqgfifgplsdafrgrkriavslilifilvsglsmfvdqplfltrfiqgltgggvi viakasagdkfsgnalakflaslmmvnglilitlaplagglalsvatwrsiftilitivali iligvasqlpktskdelkqvnfssvikdfgsllkpkafipmllqgltyvmlfsysasp fitqklynmtpqqfsmfavngvgliivsqvvallevklhrhiliilitiigvvgvalii ltltfhlplwvlliafflnvcpvtsigplgftmameertggsgnassllglfqfilgav aplvglkgefnspymiiifitailvslqiiyfkmiikkghva </p>
342.	<p> mmygyypekwlegmttgegiaaelrgivngghiaegtlltenqmakqfnvsrspirdafkl lqgnqliqlermgahvlpfgeqekkmeydlrlmlesfafsrvknqerlpivkemkkqlem mkvavkfedaesftkhdfefhetlikasnhqylnsfwshlkpvmnalvtsmrqrmqgnp qgferihhnhqvfidaveqydsqilkeafhlnfddvgkdiegfwn </p>
343.	<p> mgsffnkiaarkedpaiyqnkdghlkrtrlvrdflalgvgtivstisftlpgivaaehagg avalsflaaiavaglvaflyaemaampfagsayswvnlfgffgwgavagwallaeyfia vafvasgfsanrlglvkgpielpaalsnpgftnggfidiiaailtalllsrgmsea armenilvilklvliailfvigltainvsnyvpfipekvtatgdggwggiyagvsmif layigfdisaanaaaldpqktmrgilgslsvaivilfiavalvlgmfhyssqyannaep vgwalrqshgvgvaavqaisvigmftaligmmlagsrllysfgrdglpshlndkh lpnralviltigvligsmfpaflaqlisagtlvaemfvsiamyrlrkregkdipaf klplyvpvpaitfvlllvfwglgfeaklytlwifvigiilylsygrlshskkndvaeyhp pk </p>

344.	mnsdnmwlvtvmgllliisivglliakkinpvgmtiipclgamilgysvtdlvgffakgl dqvinvvimfiifaiiffgimndsglfkplvkrliimtrgnvvivcamtaligtiaqlidga gavtfllisipallplykalmnkylllillalsaaimmvpggpmarvaavlkaksvne lwygllpiqigifilvmlfavylgffkeqkrikkaierneipqtqdidvhlkvevyerdqd vrfpvkgrartkswikwvntaltclavilsmliinappefaffmignslalvinfksvdeqm erlrahapnalmmaaviiiaagmflgvlnetgmklakatnlikvipaevgpylhiivglg vpdliltstdayfavlpiveqtaggfvgpsvstaysmvigniigtfvspfspalwlaig laeanmgtyikyaffwiwgfaiwmlviamlmgivti
345.	mentvkyrkfilpivvgllliwaltpfkpdavdptawymfaifvatiiaacitqmpigavs iigftimvlvgivdmktavagfgnnsiwliaaffisrgfvktglgrialhfvklfgkk tlglaysivvgvdlilapatpsntaraggimfpiikslsesfgskpkdgsarkmgafivft efqgnlitaamfltamagnplaqlasstsnvhitwmnwflaalvpglvsliivvpfiyk iypptvketpnakswaenelatmgkialaekfmigifvvaltvlwlvgsfihidatltafi alalillltgvlwtqgdilnetgawntlvwsvlvlmadqnlklgffipwlsksiatlsggls wpivlivililfyfyshylfasstahisamyaallgvaiaagapplfsalmlgffgnllas tthysggpapiifssgyvtqkrwmtmnlilgfvfyfiiwiglslwmkvigif
346.	mnkvikmlvvtlafilvlagcsgnsnkqssdnkdktetsikhamgttelkgpkkrvvtly qgadtavavslgkpvgaeswtgkpkfeyikndlkdtkivggpapnleeisklkpdliv askvnekvdydqlskiaptvstdtvmfkfdttklmgkalgekeaedllkkyddkvaafq kdkakypkdwplkasvvnfradhtriyaggyageilndlgfkrnkdlgkqvndngkdiig ltskesiplmnadhi fvvksdpnakdaalvkttesewtsskewknldavknngvddlde itwnlaggykssllkliddlyeklniekqsk
347.	mingsiwrsnfrilwlsqfiaiaigltvlvpllpimyaslnqlsvveiqwsgiaiaapav ttmiaspiwgklgdkisrkwmvrlallglavclflmalcttqlqfvlvrlqlgfggvvd assafaseapeadrgkvlgrlqssvsagslvgpllgvvtasilgfsallmslavtffiv cifgaklietthmpksqtpninkgirrsfqclltqqtcrfiiivgvlanfamymgmltal splassvnhataidrsvigflqsafwtasilsaplwgrfndksyvksvyifatiacgssa ilqslatnieflmaarilqgltylsaligsvmfvvnachqqlkgtfvgttnsmvlvgqii gslsgaaitstytptattfivmgvfvavsslflicstittngindhtlmklwelkqksak
348.	mkrifdvssiyglvvlspillitallikmesppaifkqkrptinnelfniykfrsmki dtpnavtdlmdstsyitktgkvirktsidelpqlnlvlgemsivgprpalynqyeliek rtkanvhtirpvgvtglavmrgdditddqkvaydhyytlthqsmmlmdmyiikytiknivts egvhh
349.	maqlnksiaslklfasyaiatyilviltalsalnlfkgyvadtfyiaetllivltiiliil ttegtwkhhdwrrivevillmltltgnvftllmfvsirryqrtsqihhsyngwesfirt trhriaigllilvymtlslivsqftfdtlatknqfnallhgsplaypfgtdddfgdrdf trvvvgtkltfssisiiisvviavifgvllgtiagyfnhldnlimrildvfvaislllava ilqslatnieflmaarilqgltylsaligsvmfvvnachqqlkgtfvgttnsmvlvgqii pnaipmivrflsnigvvtltsslsfllglvpadvaewgnlirtgsnylethsnlaivp gvclmfvvlfafnfigdavrdaalqprh
350.	mktihlfriyhsfllkwyliiylfllaallitlttiqhvteddnhfnigvvdkgdsse tklilnsigkgsnlgkxvskayddkqahltllkhhklqgyfvfdkgmtkafykqgelpis vytydqgsmksvvlsgltdsvygrlrmrsmggilafgdlapkashdsinvmtdliltgln rsgafnlepihyldtgsyyaitgflttvfifalslftvlkmnqdtvlkarlkmfhfsker llliirtlitwftymtlwsvigvviwvifisipni felynwptlaihlsyyvtflilwlliel littgllnsiskvilaivlvsgltpiftlqhiangvfnigqpfavvtnqlleilnnyi lelhpfsfysfialliinlavlvwryrg
351.	mkkqviiisglmlfslffgagnlifppmlghtagqnmwigmlgfaltgillpfitvivvaf ydegvesvgnrihpwfggfifavviysigefyigipraanvayeigtrhilpvhnqwtlii faaiffaiwyvislnpskiivdnlgklltpllllmvallsiavifnpesalsapkdkiyth pfisgsllegvftmdlvaalafsvvivngykfkgltdrmkilkyvcfsgliaailgmlyf alayvgastapgnfkdgtdiltynslrlfsgfnglvfgmtvilacttctiglvnecatft kkhvpkfsyikifalifsiigflfttglemilkiavpiltliypvsialvlisfannfst frfswayrlatvitliisilqilnsfnllhgvilksfmmlpladidlawlpfmlfaig fiidvfirrpkgatt
352.	mkhyltkfvamliitaamvcsfgllksqaaeqqsisdvysvitdaksalsnnsisndnkqk aiegvvsvavkklslsdnsesnavksdvrlkedakandnqkdtlsqlltksliayeeekask dagskikillqqgvdaakdaamtkaikdknkaeleslnslnqiwtstnetvirnydanqygg ievallqlriaiahkspldtakvshawttfksnidhvdksntsandqyhvsqindaleka ikaiddnqlsdadaalhtfietwpyvegqigtqkdgaltykiedkipyyqsvldehnhahv kdglvdlnnqikevvghsysfvdmiiiflreglevllivmtlttmtrnvkdkggtasvig galaglvlsiilaiftvetlgnsgilresmeaglgivavilmfivgvwmhkrnsakrwnd mikmnyanaaisgnlvllatiglisvlregvevii fymgmigelatkdffiigialaivil iifallfrfivklipi fyi frvlisifiimfgkmlgvsikqlqllgamprhviegfptin wlgfypsyepliaqgayimvvaliikfkfk

353.	atgaagaatttttctaaattcgcaattacaagtattgccgcattaaactgtggcaagtcct ttagtcaaatcggaggttgacgctaaggataaagatcagcaactcaaaacatcgatgcg aaagtcaacccaagaaatctcaagcaactaacgcattgaaagagttaccaaaatctgaaat ataaaaaagcattacaagaattataaggtcactgatactgaaaaagatacaaaaggattt acgcattacacattgcaaccgaaagtgggcaacacgtatgcaccagacaaagaagtataaa gttcatacgaataaaggagggttaaggtagttcttgtaaatgggtgatactgactgaagaaa gttcaacctacgaataaggtagcgataagtaaaagaagtgccacagataaagctttcgaa gcaataaaaattgaccgtcaaaaagctaaaaacttaaaaagtgatgcatcaaaaccaat aaagtgtgagattgattggagaaaaaataaataatgtttataacatagaattattacaact tcaccaaaaaatctctcatttggaattgtaaaattgacgctgaaactgggtcaagtggtgat aaattaaatgatcaagaagcagctactacaggtacaggtaaaggtgacttaggtgac acgaaacaaaattaatattaatagtgtagcggtggttatacactacaagatttaactcaa caaggtacactttcagcttacaattacgatgcgaataactgggtcaagcttacttaatgcaa gataaagataaaaaattttgttgatgatgaacaacgtgcaggtgtagatgcaaatattat gctaaagaacagtgatgactattataaaaaactttcgcccgagaatcataatgataatcaa ggtagcccaattatttcaatcgacatgtaataaacttccaaggtcaagataacagaaac aatgcagctttggattgggtgataaaatgatttacgggtgacggtgtaggacgtacatttaca gcgttgctcgtgtagaatgatgtttgtgcacatgaaattacacatggtgtaacacagcaa actgctaactctgtttaccgtttctcaatcaggtgcattaaatgaaagtttttcagatgta tttggttactctcatttgatgataagatttcttaattgggtgaagatgtttacacacctggt gtaggcgagatgcttaagaagtattgttaatccagagcggtttggacaacctctcat atgaaatgattttgtttatacaaaattctgacaacggagcgtagacacgaatttcaggtatt cgaaacaaagcagcttacaacacaaattcgttagtttggtaaaacagcttctgaacaaatt tattatagagcgttaactgtttatttaacttcaaatctgattttcaagatgccaaagca tcattacaacagcagcatttgatttatatggcgacggtattgctcaacaaagtaggtcaa gcattgggacagtgctggcggtg
354.	atgtctaaacatagtgctacgttagttattatgtttttaaactttattgcctattttt caataccaagcttctgcacatgcgacttttagaaaaatcaacaccacacagcaaggggtt attaaagacaaaccagaagcaatcaagtttagagtttaatgaacctgtgaacaccaatcac tcgagtgtagcttatttgatgataaaggtaaaagattaaagaccttaaaccaataaca actggatggtctcagacagttgtattttcatctgagcaaatgtttaatggcacgaataact attgaatggcatcaggtatctgcggatggacatgaagtcggagatagctttgaaattttca gttggaaaagtgaggctaaagatg
355.	atgaaaaaaatcaaaaacatctcgacattggtagctggacttggtatagcattttctaggt cacacaacacatcgagatgcggctgaaaaataacaatcaacaacaaagtagataataact agtacaactgaagtatcattttctaatcaggaaatttatatacttctggccaatgtact tggtatggtttatgataaaaactgggtgaaaaactcggtcaacatgggggaatgcaaatagc tgggcaactgcagctcaagcagcaggttcaactgtaataataacacctgaagaaggtgca attatgcaatcatctgaaggtgctttcggacatggtgctttcgttgaaagtgtcaataat gatgggttctattactgtatcagaatgaactatgatgggtggtccattcgtctataagcaca cgaaacatctctgccagtgaaagcaagttcatataattacatccacctgaat
356.	atgaaaaaaatcgctacagctacaattgcaactgcaggaaatcgctactttcgcattttgca caccatgacgcacaaagcagcagaacaaaataatgatgggtacaatccaaacgaccttat tcatatagctacacttacacaatcgatgctgaaggttaactaccactacacttggaaggt aactggagtcacagatcgtgtaaatcttcatataactataataattataaactacaac tactatggtttacaataactatagcaactacaataactacagtaattacaacaattacaac aactatcaatcaaacacacgcgaatcaacaagaacaaactcaaccgaggttggttttaggc gcaagctatccaacatcaagtagtaattgttcacgttacaacaacttctgcggcatcatca aacggtgtatctttatcaaacgctcgtcagcatctggttaacttatcaacttcaggtcaa tgtacatatattgtatttgacagagtaggtggcaaaatcgggtcaacgtggggttaacgca aacaactgggcaaacgctgcagcagcttctggttacacagtaaaacattcacctgctaaa ggtgcaactcttacaacgctcacaaggtgcatacggacagtagcatagcttgaaaggtgta aacagcaatgggttcaatcagagtttcagaaatgaactacggtcaggtgacggtggtgctc acttcacgtacaatctctgcgagtcgaagctggttcatataactatattcac
357.	ttggaagataaaaaagctccagtaaatgaagactttttaattacatcaaaaactatgcc gatgtaagaacataactctttcaagacgtaagatggcctcgtttgtttcacacttctaaa actgcaatttgatgatgtctcacaagaaaaactaaataacttggttacgaaaacctgataag ttttacgtgaatatattcagagctttcgaagagcttatattacaagcttggtgaaatcgt agcttacttaattactttattgatatggtcgtttctattatgtgattgatccattgttt agcagcgatagtaagatgagcaaggagaaagtcaaaaaagacctcttcaaaatattcttta caacttaataaaatgaatttaaaacatgagttagctaaaatttacaacacatggtgactt gaagatatttcttttggttatgaaatcgaagataaagacaattacttcatggttaaaactt gatccaaagtattgtaaattagttggtatctctgacgggatgtatacatatgctttcaac ctgtcttattttgacggttaatttagatttattaaaaacattcccagaagagtttcaaga gcatatttagaacgctctattgataagcaagctgacttaaatgggtttattccagacttc actaaatcagttgttttcaaaaattaatgaagcagatcctactattttacctccattttct acaatggttgaaacccctattagatttaaacgattataaaaagcttaaaaaagctggagct aaaatttaataactacatggttatcatcaaaaagtgccaatgcataatgcaaataaa gattatcaagctgataaacttcgcaatctcagctgaggcaatggactacttcagcgagttta gttaacgaaaacttaccagatgaaattgggttctatcgtttccctatggaagttaacct attaaattagatagagatgataaaactgataaggtacttgaaagctactagagatggttat aacgcttctggtgtttctcatttatctttaacaatgataaaaaactctactggtggttta acttactcagttcgttaagatgagttattcgttaatttaatttctaccgacaagttgagaga tggtttaaatcgttaaaatcagatacggcaataatcgtagcaaaaataaatggagaatttct ctattaaatgtaactggaatgagtgaaagatacttacttagagcaatttaactaagttcgtgt acatcgtgtttctcagtttagaggacgtattgctgcattacatgggttagattaccataca ttatctcaagtttagaattagaaaacaatatcttagatttagataactaatttaatacct cttgctagtctcactatggtggtttaaatactgctgttgaaacaaacaaagggaaaaata gaagactctggtggcagacctactaaagaaactaaagacttgctgtatagcggacaagca aatcgtgactctagtaattctgagacaaaactctttagaaggtggtgacactaataatgaa

[illegible]

369.	cgtttcgcacatcttcatcatattcttaataatggccaatctgtcaccataagaagtttaatt ttgtttcatcgattaaacctaattctttagctaaattgacacgtaatgcacctaacttt tgtgcaacgacatttgggttctgcaacaaacattactaagtcaccagcttcagcacca gttaagtgaagtaattgtttcaacatttctgtttcaagaagcgtccaattggacctgtc aaaccatcttccacaactttaaccacgctaattccttttagcacca
370.	cgtaacgctcctgtccatgtgtttccaaaaataataatccacatgggcaatataatcat caatatcaacatcactacgtaacgctagcaaatgctttt
371.	atgaatgaagcatcctaatttaattcttaaccatgccaaatgaatccaagccgcaactaaa atagcaagatgaagccgcaatcactggtgctggtatacaaatcgttttaaaaaatta acg
372.	attctatcagccgattatccacacggcattattaacaacacatcgattcttccaaac tgttcccttatgtcagacacaaagctaccacttgttggcttgcttgcattatccacatta tacgcttgcgcatgtcaccattacttttaattttatcgacagctcctcgataccgcttca gctatgtctaccgccaatacatatcgacaccttat
373.	cctggcgctattgtttcaggtccgtattctgttaattcattaatcgatcttttgaatc tcttcttttgggtcacctttactaataattactccagttaatggatttttttagtgggt gtcgttattgtcttctcactttttgtccttctctgttacttttctgtccctgggtgct aaatccggattaaatttacgttcttcttgaatggaatcttcaacttttttttctaatt tctgttattgttttggcgcttctggtgtaaaagtaaaccttgaacctttcaagtcatgt ctcatccagccatttgcatttatccct
374.	ttactaacattttatgtctgttaaaacctacgatgacaaaataataatagctaactttt aaaataactaaaatattttccatacagagctgtctccgacataccacgtgatagtaataat gcagtttaataaaaacgatagcagcaataatcgataaaaccgcaatttgcacaaat ggatttgaataatgctgcaggttaattcgatgccaatgggttcacaagtcgctgtaaatc gctgagaatcctgatgcaacaaaggctacggcgataaaatattcagctaataagagcccaa ccggcaacccatccaaaaattccacaaataatacatgtgaccaagaa
375.	gatgtgttgaactgagttcaattaaattatgtttttattatacactttttgacatat tttttaatttaagaatgcgaagatttttaacattctctgatgctagctttcttttcatc tttcaaatgcttaataaaatcaagccaggtgccttttagcgaatgcttccatcacatc ataccaatccgaaccgacttgttgatatatattttgcaa
376.	tctactattgttaataactgtatctaaagtgcataaaagttcgactagtgtgaatttcaatt gctactacttttttaaacgtgcctgcggattttcaaaaatacgtgcgctaacttttca atagcttgtgcagatgtacgttctgaaacgctatagccaagacatctttagataaaaca agttcatcgccgcttcaatatgaatgggcaatctcgatctaaccagatttggaaatct gcatctttaaatactagga
377.	gaagtcttggccattcccttgagtaaacatgaagccccagccatctgctcctgtgtatt acctgggtgtgttctactgggaacagtaattgttaaagcttttataaaatctatttt atcatttatattctaa
378.	sircflknfshvqsinkslvkncttilirlcikpvcnsilaasmignpvcpsghalk sasfcdhfcrylgkawyevsgycvint
379.	llhhlvllhlsqlllaqlpyqeltlvrkmdshvlglyplivvyqfmgfpyhrymqsihr fdlqyfh
380.	daplglipgvtfkndvpnfsvnirlsrgeqtppskpaafanla
381.	yikplclpiflpssviiispgcagkycdknvlfkfpikqmpvesfflavtspcssairrt slfmspignitfescc
382.	rfassysnngqsvthkkfnfvssikpnslnltnapklcattfglsatnitkspasap vnvsnvstfsvskkrpiggvkvpssttlthanplap
383.	rqrpvhvfpknnphgqynhgyghyvtlanaf
384.	mneasnliltmpneskaatkiakikppitgagiqirfkkl
385.	ilsaalstpalnntsilpnscfmsdtksttccslalstlyafalsplllilstvdsdas amstantyapy
386.	pgaiavgpysvnsligsfvissfgsplliitpvngffsvgvvifspfcpslvtfsvpga ksglnlrsflngisstffsnsvifgasgvkvnspefksvliqpfafip
387.	lltfiavkptmtnkiiantfkitkifsiiraasdiprdsnnavnkitiaaiisikppfvpn gfdnaagnsmpigftsprkfaenpdakataikysanraqpathpknsppnlttqe
388.	dvlklssiklyvfiinhflyflnlrmrrfltfmlaffifqmlnkikarspfsqcfhhi ipirtdllyilq
389.	siivntvskcikvrlvgisiattflnvacgfskirranfsiacadvrsetpiaktsldkt sspspsilngqsrnqigifaslmlg
390.	evlaipiskheapaicccitlvvcywnsnckvfikiyfiif
391.	cgttgcacaaagctgaatgttaaaatgcggatccgccagcaatgactgcaatccaacaa tctgatgcgacaccaccaacataaaataggaagaagccacatgcaatggcagctgcaaa aaattcgcttaaaaaagaatattgtaattgatgcatgtgttaaa
392.	rctklvnknadppamtaiqsdatppnirrkphamaaakfkvkeycndacck

393.	atgactaataaaagagaagatgtccgcaatatagcaattattgctcacgttgaccatggt aaaacaacttttagatgagttgtttaaacaactctggtatattcagagaaaaatgaacat gtcgaatgaacgtgcaatggactctaacgatatcgaagagagcggtggaattacgatctta gccaaaaaacgcgtgttgattataaaggtacacgtatataattttgggtacaccaggga catgcagactttggtggagaagtagaacgtattatgaaaaatggttgatggggtgtctta gtagtagatgcgtatgaaggtacaatgcctcaaacacgttttctactaaaaaagcgcta gaacaaaacctgaacctgtgtgtgtttaaataaaattgataaacatcagcacgtcca gaggggtgttagatgaagtttttagatttatttattgaattagaagcaaacgatgaacaa ttagaattccctgtgtttatgcttcagcagtaaaatggttacagcttagcttagatcctgaa aagcaagatgataatttacaatcattatataaacaattattgattatgtaccagctcca attgataaacagtgatgagccattacaattccaagtagcatgttggtgactacaatgattat gttgagcgtatttggtatttggtcggtattcagaggtaaaaatgcgtgtcgagataatgta tcactaattaaattagacggtacagtgaaaaacttccgtgttaactaaaaatctttggttac tttggatataaacgttttagaaattgaagaagcacaagctggagatttaattgctgtttca ggtatgggaagacatttaattgttggtgaaactgtaacaccacatgaccatcaagaagcattg ccagttctacgtatttgatgagcctactcttgaaatgacatttaaaagttaacaattctcca cttctggcgtgtaaggtgactttgtaacagcagctcaaatcaagaacgttttaaatcaa caattagaacagatgtatctttgaaagtttctaacacagatttccagatatacgtggta gttgctggtgcggtgaattgcatttcaatccttattgaaaaatgcgtcggtgaaggt tatgaattacaagtttcaaaaccacaagtaattattaaagaaatagattggtgtaattggt gaacctattgaacgtgtgcaatgtgaagtgccacaagaaaaatgcaggtgctgttattgaa ctattaggtgcacgtgaaggtgaaatggttgatgactacaactgataatggacttaca cggttaattctttaatgtaccggctcggtgtgattggttatacagctgaatttattgtca atgacaagaggttacggtatttataaccatacatttgaagaatttagaccaggtataaa gcacaaattggcgtgctgtaattggtgcatttaattcaatggatcaaggttctgcaagt acttaagcattttgggacttgaagatagaggtgtaaaacttcatggaaacctggtactgaa ggtttgaaggtatgattgttggtgaacataaatcgtaaaatgatttaactgttaacatc actaaaaacaaacatcaaacataacgtacgttctgcaacgaagaccaaacacaaacatg aatagaccgctgatttcaacattggaagaagcgttacaattcattaatgatgatgaactt gttctggtttacaccagaaagtatacgttttaagaagaaaaatttaaacaaaaatgttcgt gaaaaagaagcaaacgttatcaacaaatgatgcaagaaaacgaa
394.	gtgcttaggagtgatttttatatgtcttattccattgttagagtttcaaaagttaaact ggaacaaatacaacgggcatcaaaaacatggttcaagagaaataataattatgaaaaat gaagatatagaccatagtaaaacttacttaaatatgatttggtaaatgctaataaacag aattttaataacttgatttgatgaaaaaatcgaacagaattatacaggcaaaagaaaaatt agaacagacgcgattaaacacattgtatggttttaattacacagacaattgatttcttgat aatcaaacgcgaagatacaaaagcagtttttgaatgctaaagagtttttagaaca gaatcaggttaagataatttattatgtcaacagttccatggacgaaaaaacaccacat atgcattatggtcggttcttcaataactgatgatggtcggttaagtgtcaagaagttgta ggtaataaaaaaagctttaaagcgtttcaagatagatttaattgagcatgttaaacacga gataatgatttagaacgtgggcaatcaagacaagttaacaaatgctaatacatgagcaata agtcatgataaaacaaaaacagaatatacagaagaaatgaacgtgagagccaaaaa acagaccataataagcaaaagacgataaatttaattgcaagagtacaaaaaatcgtaaat acgtcttaaaagcctataaatgttccgtatgagcaagaactgaaaaagtaggtggttta tttagcaaaagaaatcaagaactggaaatggttgaataagccaaaaagatttcaatgaa tttcagaacacagataaaagctgctcaagatatttccggaagattacagatataaaagt ggttagagccttagatgataaagataaggaatacagagagaagatgatttataataaaa gcagttgagcgtattgaaaacgcagacgataattttaaaccactttacgaaaatgcaag ccactaaagagataatagaataatagcgttaaagcttttaaaaaatcttactaaaaggtta gaacaggttttaggaagaaatacctttcggaagaggttaataagttaacagaagatgaa ccaaaacttaattggttttagcaggaacttagataaaaaatgaatccagaattatattca gaacaggaacagcaacaagaacacaaaagaatcaaaaacgagatagaggtatgcactta
395.	mtnkredvrmiaiahvdhgttlvdellkqsgifrenehvderramsndierergitil akntavdykgrtrinildtpghadfggeverimkmvddvvlvdayegtmqtrfvlkka eqnlkpvvvvnkidkpsarpegvdevldlfileeandeglefpvvyasavngtasldpe kqddnlgsllyetidiyvpapidsdeplqfgvalldyndyvgrigirvfrgkmrvdgv slrikldgtvknfrvkiifgyfglkrleieeaqgdliavsgmedinvgetvtpdhqea pvlrideptlemtfkvnnsfagregdfvtarqigerlnqqltdvslkvsntdsptdw vagrghelhsilienmrregyelqvskpqvikeidgvncepfervqcevpqenagavie sigarkgemvdmtdtdngltrilfnvpargmigytfmsmtrgyglinhtfeefrprik aqiggrngalislmdqgsastyailgledrgvnmfepggtvvyegmivgehnrendltvni tktkhgtvrsatkdqgtqtmnrpriltlealqfinddelvvvtpesirlrkilnknvr ekeakrikqmmgene
396.	VLRSDPYMSYSIVRVSKVSGTNTTGIQKHVQRENNNYENEDIDHSKTYLNYDLVNANKQ NPNLNLIDEKIEQNYTGKRRKIRTDALKHIDGLITSDNDFDNQTPEDTKQFFEYAKEFLEQ EYKDNLLYATVHMEKTPHMHYGVVPTDDGRLSAKEVVGNKKALTAQDRFNEHVQR GYDLRGQSRQVTNAKHBIQSQYKQKTEYHKQYERESQKTDHKKQKNDKLMQYEQKSLN TLKKPINVPYEQETEKVGLFSKEIQETGNVVISQKDFNEFQKQKAAQDISDEYIYKS GRALDDKKHIREKDDLLNKAVERIENADDNFNQLYENAKPLKENIETALKLLKLLKEL ERVLRNTFAERVNKLTEDEPKLNLGLAGNLDDKKMNPELYSEQQEQEQKQKQKRDGMHL
397.	atgactgttgaagaagatccaataacagccaaagttgacatttttaggggtcgattttgat aatacaacaatgttgcaaatggttgaaaattataaaaccttttttgcaaatcaatcaacg aataactcttttatagtaacagccaacctgaaatagtgaaattacgcgacgacacatcaa gcgtatttagagttataaaatcaagcgagctatattgttgctgtagggacaggagtagtc aaagcttccgcatcgtttaaagcaacctctagcgcatcgtatacctggtattgagttgatg gatgaatgtttgaaaattgctcatgtaaatcatcaaaaagtatttttgctaggggcaact aatgaagttgtagaagcggcacaatatgcattgcaacaaagatatccaaacatatcgttt gcacatcattcacggttatattgatttagaagatgagacagtagtgaaacgaaattaaactg tttaaaccctgattacatttttaggttagtggtattccctaaacaagaagaatggattatg acacatgaaaaaccaatttgaatctacagtgatgagggcgtaggtggttctctgaagta tttgctggggctaaaaagagagcgccttatattcttagaaaaataaacattgaaaggata tatagagcattatagattggaacgatttggttagatttaagagatttccaatatttatg tataaaatagccaaagcaaaaagaaaaataaaaaaggcgaa
398.	mtveersntakvdlgvdfndttmlqmvniktffanqstnnlfivtanpeivnyatthq aylelingasyivadgtgvvkashrlkqplahrpigelndecikiahvnhqkvllgat nevveaayvalqrrypnisfahhgyidledetvvkrikfkpdyifvmgfgpkgeewim thenqfestvmgvggslvfvagakkrapyifrklniewiyralidwkirigrklsipifm ykiakakrkikkak

399.	atgagtgaataatTTTaaGttacgtaaaatgaaagtcggttttagtatctgttgcaattaca atgttatataTTatgacaaacggacaaagcagaagcatctgaaaatcaaaacgcttTaate tctaataataatgtagacaatcaggaaaaacagaataatgtaaatcaagctgttcagcct caaaataatactaatgaacatcaaaagtagcggctaatTTTgtcaaatgaaatgatatt aaaccgggtgatacttctatacaaggaaacactttaccaaatcaatttatactattTaact attgataaaaaagatgtgagctcagttgaagattctgacagcagctttgttatgtctgat aaagatgggaattTTaagtatgacttaaatggtcgcaaaatctgttcataatcaagaaatt gaagtgcttcatcagatccctatttaggtgacgatgaagaagatgaagaagtagaagaa acttcaactgaagaagttggtgctgaggaagaaagtagaagctaaagctacatatata acaccgggatatgaaaaagcgatgaaataccgaaagaacagctaaaaagaaaagatgga catcaccaggtTTTTatcgaaacctattactgaaggttcaggtatttataaaggccataacc tctgtaaaaggtaaagttgctctatctattataataaatttattaactttgagacaaaat gctaatggtggtccaaataaagaagaagcgaaatctggatcagaaggaatctggatgcct attgatgacaaaggatactTTaattttgacttcaaaacgaaacgcttcgatgatttagag ttaaagaaaaatgatgagatctcattaacatttgacactgatgacgaagatgaggcattg aagtcatttaattTTTcaaaactaaggtaacgagtttagaagatattgataaagcagaacat aaatgatgaccatactaaagtggaaaaaagtaaaagtattgaaagatgttaaagaagattta catgtagatgaattttacggaagcttatatcatacagaaaaaggttaaaggtattcttgat aaagaaggtagactaaagtaattaaaggttaagactaaattcgcaaatgcaagttgtgaaggt gactctgaactaggtgaaggtcaagaattccctgatttgcaagtcgatgraaagggtgaa ttcagcttggatgtagatcatgctggatttagattacaaaatggagaaacactaaacttc acagtagttgatctctattacaggtgaatttatagtggaattttgttcttaaaaaacata gatatttatgaatctcctgaagaaaaagcagatcgtagtttgatgaagaatggaaaac acacctgcatatcataaattacatgggtgataaaattgtcggtacgatactaacggattc ccgatctacctggttttatccattaggtgaaagaaagttgaacgtaaggcaccacaaatta gaaaaa
400.	msenfklrkmkvglvsvaitmlyimtnngqaeasenqnalisininvdngekqnnvnqavqp qnnbnetkskvpafvklndikpgdtsiqggttlpnqfilltdkkdvssvedsdssfvmsd kdgmfkylndlgrkivhngieievssdpylgddeeveeetsteevgaeeesteakaty tpryekayeipkeqlkekdgghqvfiiepitseggiikghtsvkgkvalsinnkfinfetn anggpknkeeksgsegiwmpiddkgyfnfdktrfddlelkkndeisltfapddedeal ksllfktkvtsledidkaetkydhtkvekvlkdvkedlhvdeiygsllyhtekkgild kegtkvikgktkfanavkvdselgeqgefpdlgvdxkgefsfdvdhagfrlmgnetlnf tvvdpitgellsgnfvsknidiyespeekadrefermentpayhklngdklvgdydngf pitwfyplgekkverkapklex
401.	gtctatatgtctcaagtaccaggtttattgttaggtggtgacaacaattgtaataagtc actaatatcatttaagaaagatcaagtggaatcaattaaaagcgatgggaattcaagctgc tttttttaa
402.	vymisstrfivrwymncnkstniinerssgsiksngnsscffk
403.	tttaaatataaaaaaacagaaaaatccttagtattatgatgcaacaattaaaattact atactatatctatatttaacgataaaataaatgggaatccttcttaacataacaccaa aagaccgtacttctgcccactggccaaaaagaaattgatttttagctgtcttcacaatg aaagtttcaaaatcttttgcgtgattttgacgtacttttttggaatcagccaattaatc attgggaaaaagagtgctaaccatgtacttactaaatcaatcatcaaatattcatctt tatttgataaattctatatttgggattcttatttaattttttagtttccacaaagcaatg tccacttcttttcaattggttttat
404.	fkykknrkipsimmgqikilitilysyltinkweyllnitpnktvlpatgqkelilavftmf kvskfsfliltyffgisqliigkksanhvltksiiyksylliilylgfllifsvsqsnv stsfqlviy
405.	ggaatgaaatgatttcgatttccgatgaaatcaattgtttaaatttggtagaattgtgta gggttatgttcttttatttctctgctaagtatttttttgatttccatttcttctaac actgtagctaagacatcaataaagcgtggaagtttttagttacagctaggctgatacga cga
406.	gmkmisisdeinliccncvglcsfissakyifwisissntvaktssikrgkflvtarsirr
407.	tttgaagctacaaaggtaccgcataatggcagcacatttaatacaatgcgctaaacttt aatgaggcgctgatttgcttctttaaagtaacatagcactgataattcctaaaata gctactatagtggaattgtcatgctcggaactgaggtatagtaagaaagcaccacaaga cctgctatcacaccacatacgaacgaatataagaaattgcttcaaatcattcactcct aaattgttattacattatcacaca
408.	featkvphngstlinnalnfnealiclslkvniaaliipkiatirgimlgygcickkapr paitphtnaiyrncfksftpkllhyt
409.	atgcttgctgctgcatactatttagaatctggtgcagaaggtacgcgtgtagaagatacc atgacagctattgcaaaaaacttggttacagtgaagtaaacagctttgttacaaacact gtcatccagtttacgttacattcggaatcgtttcttagaattatttagaattacctctga gatacaaaacttaataaaaaatttctcaagctaaataatttcgcgtcaaatacaaacaat gaaatttctttagccgaagcaaaaacgcaacttgaaaaatataatgttgctaagcgtgac agcagctcttccctttaaagggttttgcgtgcagcaatgattgcaatgagttcttataatt caagggtgtagattgattgatgttttaactgcgatattagcaggtagcttaggataccta gtcactgagatttagatcgtaagttacacgcacagtttatccagaatttcatgtgttca ttagttattgggattatcgccgttattggacatacacttattccacaggtgacttgga actattatcatctgcggcagtcagctattgttctggtgattataatacaaacgcaata caagatttatttgggtggacacatggtgatgttcacacgaatcattagaagcattggtt actgcgtttggcatcggtgctggcgttggttagcgtatttaatttttagta
410.	mlaarillesgaegtrvedtmtriakklgyseesfvntnvigfthsesfpripritsr dtnlikisqankisrqitnneislaeaktqlekiyvkrdsslpkgfaaamiamsflyl qgrlidvltailagslgylvteildrklhaqfipefigslvigiiavightliptgdla tiiaavmpivpgvliitnaiqdlfgghmlmfttkslealvtafgigagvgsvliiv

411.	atgacatttaataaagtattatttgagctggatagtcataattgattataacaactagcata tatctattttggcagttggcgatcatcaatgatgtatttaaccagtcatttttaataat gttagattaccgagattattagaagcattgttgacaggtatgatatttaactgttgaggc cttatatttcaaacagttttaataatgcatggcagatagctttacattaggattggca agcggcgctacatttgggttcaggattagcattatttttaggtttaacaacgttatggatt cctgtattttcaataacatttagtttgataacattaataactgtatttagtcattacgtcg gtattgagccaaggctatccagttagaatcttaataattaagtgggttaatagtattggcg ttattcaattcacttctatatattttttgattttattaaaaacctcgcaaatataatacaatt gccaattatctgttttgggtgttttgggtgatgcagaatactcaaatgtatctataatagca atcacatttatcatctgattgtttgggtatatttatcattcttaatacaactaaagtatttg caattaggagaactaaaaagtcagtcacttaggcttaaatgttcaattgattacatatatc gcgttatgtatagcttctatgataacggcgataaaatgtcgcatatgttggcatcattgga ttcattgggtatgggtgataccgcaactcattagaaaaatggcagtggaacaatcattagga agacaattggctttaataattgttaactggaggacaaaataatgggttatggcagattttatt ggtagccatatattgtcaccagtaacaaataccggcaagtattatcattgcattaattgggt ataccaggtttattttacatgctaatatctcagtcgaaacgggttacac
412.	mtfnkvlwsviviliittsiylfwqlgdindvfnqsilinvrprllealltgmiltvag lifqtvlnnaladsftlglasgatfgsglalflglttlwipvftsitfslitltvltvits vlsqgyppvriililsglmigalfnsllyflililprklntianylfgggfdaeynsnvsia itfialfgyfiilnqlklilglgelksqslglnvqlitlyialciasmitainvayvgiig figmvipqlirkwqwkqslgrqlalnivtggqimvmafignshilspvqipasiialig ipvlfymlisgskrlh
413.	atgaacaaacagcaaaaagaatttaaatcattttatttcaattagaaagtcactcactaggc gttgcatctgttagcaatttagtacactttttatttaaatgtcaaatggcgaaagcacaagca gcagctgaagaaacaggttggtacaaatcacagaagcacaacaaaaactgaagcagttgca agtcacaacacacacatctgaaaaagctccagaaactaaaccagtagcctaattgctgtctca gtatcttaataaagaagttgagggccctacttctgaaacaaaagaagctaaagaagttaa gaagttaaagcccttaaggaaacaaaagaagttaaaccagcagcaaaagccactaacaat acatactcattttgaatcaggaacttagagaagcgattaaaaacccctgcaataaaagac aaagatcctagcgacacaaactctcgctcaattgattttgaaatgaaaaagaagatgga actcaacagttttatcattatgcaagttctgttaaacctgctagagttattttcactgat tcaaaacacagaattgaattaggattacaatcaggtcaattttggagaaaatttgaagtt tatgaaggtgacaaaagttgccaattaaatagtagtatcatagcactggttaaagattat gcttacattcgcttctctgtatcaaacggaacaaaagctgttaaaattgttagttcaaca cacttaacaaacaaagaagaaaaatcagattacacattaatggaattcgacacaaact tataacagtcagataaattcaaaactgaagaagattataaagctgaaaaatttatagcg ccatataaaaaagcgaaaaacactagaaagacaaagtttatgaaatataaataaaattcaagat aaacttctgaaaaaattaaaggctgagtagaagaagaaatttagaggatataaagaagagct ttagatgagcaagtgaaatcagctattactgaattccaaaatgtacaaccaacaaatgaa aaaatgactgatttacaagatacaaaaatagtgtgtttatgaaaggttgagaataacgaa tctatgttggtgactttttgttaaacaccctattaaaaacaggtatgcttaacggcaaaaaa tatattggttatggaactactaatgacgattactggaagatttcatgggtgaaaggtcaa cgtgttagaactataagcaaaagtgtcaaaaaataactagaacaattattttcccatat gttgaaaggttaaaactctatatgatgctatcggttaaggttcacgttaaaacagattgattat gatggacaataaccatgtcagaatcgttgataaagaagcatttcaaaaagccaataccgat aaattcaacaaaagaacaaacaaagataactcagctaagaaggaagcactcagcagctacg cctagcaaaccaaccaccatcaccgttgtaaaaaagaatcacaaaacaagacagccaaaaa gatgacaataaaacaaatcaccaaggttgtaaaaaagaaaaatgacgcactctagtgagtcaggt aaagacaaaacgcctgtctacaaaacaaactaaaggtgaagtagaatcaagtagtacaact ccaactaaaggttagtatctacgactcaaaaattgttgcaaaaacaaactgtctcatcaaaa acaaacaaaagattgttttcaaaacttcagcaggttctagcgaagcaaaaagatagtgctcca ttacaaaagcaaacattaaaaacacaaatgatggacacactcaaaagccaaaacaaataaa aatacacagaagaaaataaagcaaatcattaccacaacactgggtgaagaatcaaaataaagat atgacattaccattaatggcattatttagctttaagtagcatcggttgcatcgtattaccc agaaaacgtaaaaac
414.	MNKQKQEFKFSFYIRKSSSLGVASVAISTLLLLMSNGEAQAAAEETGGTNTAEQPKTEAVA SETTTSSEKAPETKPVANAVSVSNKEVEAPTSETKEAKEVKEVKAPKETKEVKPAKATNN TYPILNQELREAIKPAIKDKDHSAPNSRPIDFEMKKKDGTOQFYHYASSVKPARVIFTD SKPEIELGLQSGQFWRKFVYEGDKLPIKLVSYDTVKDYAIRFVSNGTKAVKIVSST HFNNKEEKYDYTLMEFAQPIYNSADKPKTEEDYKAEKLLAPYKKAKTLERQVVELNKIQD KLPELKAIEYKKLEDTKKALDEQVKSALTEFQNVQPTNEKMTDLQDTKYVVYESVENNE SMMDTFVKHPIKTGMLNGKKYVMETINDDYWKDFMVEGQVRVTSKDAKNNTRTIIFPY VEGKTLYDAIVKVVHVKTIDVDGQYHVRIVDKFAFTKANTDKSNKKEQDQNSAKKEATPAT PSKPTPSPFVEKESQKQDSQKDDNKQLPSVEKENDASSESGKDKTPATKPTKGEVSSSTT PTKVVSTTQNVAKPTTASSKTTKDVVQTSAGSSSEAKDSAPLQKANIKNNTNDGHTQSQNNK NTQENKAKSLPQTGEBSNKDMTLPMLALLALSSIVAFVLPKRKN
415.	atgaattatccaaatggtaaacatctcgtaaaaatagtgctatagacggagggaaaaaag accgctgccttttagtaatttgagtatgggtggacgtggtatgtcactgaaaaagatatc gaacattcaaatcagttttatcttaaaagcgacattgcagttattcacaaaaagcctacg ccagtacaaatagtttaattgtcaactatcctaagcggagtaaaagctgtgattacgaagct tattttcgtaacacctcaacaactgattacaacggcggtttatcaaggttatttatattgat tttgaagcaaaagaaactaaaaaagacgtcccttctttaaataatattcatgaccat caagtgcgaacatatgaaaaatgcatacaacaaaaggtattgtgttttttaattgattcgt tttaaaacgctagatgaagtttatcttttacccatttcaaaattcgaagatttttgaag agataaaagataaattaaaragttctataacagttgatgaaatagcaaaaaatgggttac catattccttatcagtatcaaccaagattagactatcaaaagcagttgataagttgata ctagatgaagtgaggaccgcgta
416.	mnypngkpyrknsaidggkkttaafsnieygggrgmslekdihsntfylksdiavhkkpt pvqilvnyvpkrskavineayfrtpsttdyngvyggyyidfeaketknktsfplnnihdh qvehnmkaygqkgivflmirfktldevyllpyskfevfwkrykdnikxstivdeirkagy hipyqyqprldylkavdkilidesedrv

[illegible]

421.	<p>atgagagataagaaggaccggtaataaaagagtagattttctatcaataaattgaat aaatatccaataagaaatttacagttggaacagcatctattttaattggctcactaatg tatttgggaactcaacaaggaggcagaagcagctgaaacaatattgagaatccaactaca ttaaaaagataatgtccaatcaaaagaagtgaagattgagaagtaacaaacaaagacact gcaccacaggggtagaagctaaatctgaagtaacttcaaacaaagacacaaatcgaaacat gaacctacagtaaaagctgaagatatcaaaaaaggaggatcacacaaagaagtagct gaatttgcctgaagttcagccgaaatcgctcagtcactcaaacgcagagacacctaagggt agaaaagctcgttctgttgatgaaggctcttttgatattacaagagattctaaaaatgta gttgaatctaccccaattacaattcaaggtaaagaacattttgaaggttacggaagtgtt gatatacaaaaaaaccaacagatttaggggtatcagaggtaaccaggtttaatgttgg aatgaaagttaattgttagtaggagctttacaattaaaaataaaatagatttttagtaag gatttcaattttaaagttagagtggaataaaccatcaatcaaataccacaggtgctgat ggttgggggttcttatttagtaaaaggaaatgcagaagaattttaactaatggtggaatc cttgggggtatgggttaaattcagggcgatttaaaattgatactggatacatttat acaagttccatggacaaaactgaaaagcaagctggacaaggttatagaggatacggagct tttgtgaaaaatgacagttctggtaattcacaaatgggtggagaaaaatattgataaatca aaaactaatttttaactatgcggaacattcaactaatatcacatcagatggaaagtttcat gggcaacggtttaaatgatgtcatcttaacttaattgttgcctcaactggttaaaatgagagca gaatatgctggtgtaaaacttgggagacttcaataacagatttaggtttatctaaaaatcag gcataataatttcttaattacatctagtcagaagatggggccttaatacagggtataaatgca aatggctggatgagaactgacttgaagggtcagagtttacttttacaccagaagcgcca aaaacataacagaatttagaaaaaaagttgaagagattccattcaagaagaagcgtaaa tttaattccggatttagcaccaggagacagaaaaagtaaacagagaaggacaaaaaggtgag aagacaataacgacacacacactaaaaaatccatttaactggagtaatttattagtaagggt gaacaaaaagagagattcaaaaagatccgatttaataaataacagaatacggacctgaa acaattcagcccggtcatcgagacgaatttgatccgaagttaccaacaggagagaaagag gaagttccaggttaaacagggaattaagaatccagaacaggagacgtagtttagaccaccg gtcgtatagcgttaacaaatattggacgtgtaaaaggagactcgttagtagaaaaagaagag attccattcgagaaagacgttaaatttaatccggatttagcaccaggagacaaaaagta acaagagaaggacaaaaaggtgagaagacaataacgacacacacactaaaaatccattat actggagtaatttagtaagggtgaacacaaagaagaatacacaagaatcccgatttaata gaattaacagaatacggaccagaacacgataacaccaggtcatcgagacgaatttgatccg aagttaccaacaggagagaagaggaagttccaggttaaacagggaattaagaatccagaa acaggagacgttagtagaccaccggtcgatagcgttaacaaaaataggacgtgtaaaagga gactcgtatttagtagaaaaagaagaattccattcaagaaagaacgttaatttaattccggat tagcaccaggagacagaaaaagtaacaaagagaaggacaaaaaggtgagaagacaataacg acgccaacactaaaaatccatttaactgggagaatttattagtaagggtgaatcgaaagaa gaattacacaaagatccgatttaatagaattaacagaatacggaccagaaacagataaacacca ggtcatcgagacgaatttgatccgaagttaccaacaggagagagaagaggaagttccaggt aaaccagggaattagaatccagaacaggagacgttagtagaccaccggtcgatagcgtta acaaaatttgacctgttaaaaggagactcgtatttagtagaaaaagaagaattccattcaag aaagaacgttaatttaattcctgatttagcaccaggagacagaaaaagtaacaaagagaagga caaaaaggtgagaagacaataacgacgccaacactaaaaaatccatttaactggagaaatt atttagtaagggtgaatcgaaagaagaatacacaagaatccgatttaatagaattaacagaa tacggaccagaaacgataaacaccaggtcatcgagacgaatttgatccgaagttaccaaca ggagagaaagaggaagttccaggttaaacagggaattaagaatccagaacaggagagatgta gttagaccaccggtcgatagcgttaacaaaatattggacctgttaaaaggagactcgtattgta gaaaaagaagaataattccattcgagaaagaacgttaaatttaatcctgatttagcaccagg acagaaaaagtaacaaagagaaggacaaaaaggtgagaagacaataacgacgccaacacta aaaaatccatttaactggagaaatttattagtaagggtgaatcgaaagaagaatacaca gatccagtttaatagaattaacagaattccggtggcgagaaaaatccgcaaggtcataaagat atccttgatccaaacttaccacagatcaaacggaaaaagtaaccaggttaaacagggaatc aagaattccagacacaggaaaggtgatcgaaagacagtggtgatgtgatttaaacacgga ccaaaaacgggttacaccagaaacaaaaacagtagagataccggttgaacacaaacgtgag tttaattccaaaatttacaacctgggtgaagagcgagtgaaacaagaaggacacacagggaat aagacaatacacaacacacacacagtgaaacccattaacaggtgaaaaagttggcgagggt caaccaacaggaagatcacaaaaacacacagtagataagattgttagagttcgggtggagag aaacaaaaagatccaaaaggacctgaaaaccagagaagccgagcagaccaactcatcca agtggtccagtaaatcctaacaatccaggattatcgaaagacagagcaaaacaaatggc ccagttcattcattggataaaaaatgataaagttaaaaaatctaaaaattgctaaagaatca gtagctaatacagagaaaaaacgagcagaattacaaaaaacaggtttagaagacacgcaa aaaggtttgattcttagtagtataattggaatttgctggatttaattggtcgttaga agaaagaat</p>
422.	<p>mrdrkpgvnpkrvdfnsnklnkysirkftvtgasilgslmylgtqgeaaennienptt lkdnvqskvkievtnkdtapqgveaksevtstnkdtehepsvkaedisckedtpkeva dvaevqpskvsthaetpkvrkarsvdegfdirtrsknvvestpitiqgkehfevygsv diqkktldlgvsevrtnvgnenlglalqlknkidfskdfnfkvrannhqsnttgad gwgfllfsgnaeeyltnngilgdkglvnsaggfkidtyiysmdktekqaggyrgyga fvkndssgnsqmvgenidksktnflnyadnsntsdgkfhgqrindviltvastgkmra eyagktwetsitdlglsknqaynflitssqrwglngginangwmrtdlkgseftfpeap ktiitekkveeipfkkerkfnpdlapgtekvrtregqgkektittptlknpltgviiskg epkeetkdpinelteygppeitapghrdefdpklptgekeevpgkpgiknptgdvvrpp vdsvtkygvpkgsivekeiepfekerkfnpdlapgtekvrtregqgkektittptlknpl tgviiskgepkeetkdpinelteygppeitapghrdefdpklptgekeevpgkpgiknpe tgdvvrppvdsvtkygvpkgsivekeiepfekerkfnpdlapgtekvrtregqgkektit tptlknpltegiiskgeskeetkdpinelteygppeitapghrdefdpklptgekeevpg kpgiknptgdvvrppvdsvtkygvpkgsivekeiepfekerkfnpdlapgtekvrtreg qgkektittptlknpltegiiskgeskeetkdpinelteygppeitapghrdefdpklpt gekeevpgkpgiknptgdvvrppvdsvtkygvpkgsivekeiepfekerkfnpdlapg tekvrtregqgkektittptlknpltegiiskgeskeetkdpineltefgekipqghkd ifdpnlptdqtekvpgkpgiknptgkviiepvddvikhgpkgtptetktveipfetkre fnpklpgeervkgeqggsktittptvnpitgekvgeqgpteitkqpvdkivefge kpdkdpkpenpeksrpthpsgvpnpnpglskdraknpvpsmdkndkvkskiakes vanekkraelpktglestqglifssliagiaglmllarrkvn</p>

423.	<p>gtgaaaagcaatcttagatagcgacataagaaaaacaaaattgggagcggcctcagtatc ttaggaaacatgatcggtgttgggaatgggacagaaaaagagtcgagcatcggaacaa aacaatactacagtagaggaaagtgggagttcagctactgaaagtaaaagcaagcgaaca caacaactacaaaataacgttaatacaatagatgaaacacaaatcatagcgcgacatca actgagcaaccatcacaaatcaacacaaagtaacacagaagaagcaccgaaaaactgtgcaa gcacaaaagttagaaacttcgagagttgatttgcctatcggaaaaagtgtgctgataaggaa actacaggaactcaagttgacatagctcaaccaagtaacgtctcagaaattaaaccaaga atgaaaagatcaactgacgttacagcagttgcagagaaagaagtagtggagaaactaaa gcgacaggtacagatgtaacaaaataagtggaagtagaagaaggttagtgaatatttagga cataaacaagatagcaatgttgttaaatcctcataacgcagaaagagtaaccttgaaatat aaatggaaatttggagaaggaattaaagcgggagattattttagatttcacattaaagcgat aatgttgaactcatgggtatctcaacactgcgttaaagtcccgagataaaaaagtagat ggccaagtattggcgacaggagaaataattggagaaagaaagttagatatacgtttaa gaatatgtacaagaaaagaaagttaactgtcgaattatctttaaattctatttattgatt cctacaacagtgacgcaaaaaggttaacaaaatgttgaagttaaattgggtgagactacg gttagcaaaatatttaatttcaatattttagtgaggttagagataattggggagtaaca gctaattggtcgaattgatactttaataaaagtagatgggaaatttagtcaatttgcgtac atgaaaccttaacaaccagtcgttaagctctgtgacagtaactggtaacgtaactaaagga aataaacacaggggttaataatccaacagttaaagttataaacacattgggttcagacgat ttagctgaaagcggtatattgcaaacgttgatgagtcacgcaaatgtgaagatgtgactgat aatatgagtttagattttgatactaatgggtggttattctttaaactttaataatttagac caagtaaaaaattatgtaataaaaatagaaaggtattatgattcaaatgctagcaactta gaatttcaaacacaccttttggatattataactattattatacaagtaatttaacttgg aaaaatggcggttgcatcttactctaataacgctcaaggcgacggcaagataaaactaaag gaacctattatagaacatagtagtctctatcgaacttgaatttaaactcagagccgagtg gagaagcatgaattgactggtacaactcgaagaaagtaattgattcgaagcaattgatttt gaatatcatagcagctggttgaaggtgcagaaggtcatgcagaaggtacattgaaactgaa gaagattcttattctatgtagactttgaagaatcgacacatgaaatttcaaacatcatgct gatgttggtagaattgaagaagatacaaacccaggtggtggtcaggttactactgagct aacctagttagaattgacgaagattctacaaaaggtattgtaactggtgctgtagcgat catacaacaattgaagatcgaagaataatacgaactgaaagtaactctgattgaactagta gatgaactacctgaagaacatggtcaagcgcaaggacaaatcgaggaatttactgaaaac aatcatcatatttctcattctggttttaggaactgaaatggtcagcgtaattatggcggt attgaagaaatcgaagaaatagccacgtggtatttaagagtgtaattaggttacgaaggt ggccaaaatagcggttaacagtcatttgaggaagacacagaagaagataaacggaatat gaacaaggtggcaatatcgtagatcgtattcgatagtgtagctcaattcatggtcaa aataatggtaaccaatcattcgaagaagatacagagaaagacaaactaagtagaaca gggtggttaatatcattgatcgcacttcgacaggtgtgccacatttcacggattcaataag cacactgaaattattgaagaagatacaataaaagataaaacaaattatcaattcgggtgga cacaatagtggtgactttgaagaagatacactccacaagtaagtggtcataatgaaggt caacaaacgattgaagaagatacaaacacctccaatcgtgccaccaacgccaccgacacca gaagtaccaacgagcgccgaaacacacaccaccgacacagaaagtaaccaagcgagccg gaaacaccaacaccgccaacgagaggtaccaactgaactggtaaccaataaccacct gctaaagaagaacctaaaaaaccttctaaaccagtggaacaaggttaaagtagtaaacct gttattgaaatcaatgaaaaggttaagacagtggtaccaactaaaaagcacaatctaag aaatctgaactacctgaaacaggtggagaagaatcaacaaacacggcatgttggtcggc ggattatttagcatttttaggttttagcggtattattcgcagaaataaaaagaatcacaaagca</p>
424.	<p>vknsrlrygirkhklgaasvflgtmivvgmqeekaaaseqnnntveesgssateskaset qtttnnvtidetsysatstegpsqstqvtteeapktvqapkvetsrvdlpsekvadke ttgtqvdiagpsnvseiiprmkrstdvtaevveetkatgtdvtnkveevgeegseivg hkqdtvnnvphnaervtlkykwkfgegikagdyfdftlsdnvethgislrvkpeikstd gqvmatgeiigerkvrytlfkeyvqekkdltaelslnlfidptvtgkgnqnvveklgett vskifniqlggyrdnwgvtangridtlnkvdkfshfaymkpnnqslssvvtvgqvtkg nkpvgvnnptvkvykhigsddlaesvyaklddvskfedvtdnmsldfdtnggyslnfnld qsknyvikiyeggydsnasnlefqthlfgyyynyysnltnkngvafysnnaqgdgkdklk epiiehstpielefkseppvekhehtgtieesndskpidfeyhtavegaeghaegtieta edsihvdfiesthenskhhadvveeedtnpgggqvttesnlvdfedestkgiavtgsavd httiiedtkeyttesnlielvdelpcehggaqgpieitennhishsglgtenghnygv ieieieenshvdikselgyeggnsgnsgsfeedteedkpkyeeggnivdiidfdsvpqiagg nngnsgsfeedteedkpkyeeggnliidfdsvphihgfnkhteieedtnkdnpnyqfgg hmsvdfeedtlpqvsgnheggqtiiedtppivpptpvpsepptpvpsepptpvpsep etpvpptpvpsepptpvpsepptpvpsepptpvpsepptpvpsepptpvpsepptpvpsep kselpetggeestnngmlfgglfsilglallrrnknkhka</p>

425.	<p>atgaaagctttattacttaaaacaagtgtatggctcgttttgccttttagtgaatggga ttatgggaagcttcgaacgcggtgagcagcatcaccaatgaaagcacatgcagtaaca acgatagacaaagcaacaacagataagcaacaagtaccgccaacaaaggagcggtcat catcttggaagaagcggaacacacgtatcagcatcagcgaggggaacagctgatgat acaaacagcaaaagtaacatccaacgcaccatctaacaacacatctacagtagtttcaaca aaagtaaacgaacacgcgacgtatgatacacaacacgctcaacacaaaacacacac acagcaacggttcaaatatcaaatgctaaacacgcatcactttcaccacgaatgttgc gctaatgcaccacaacaacacacataaaatattacatacaaatgatattcatggccga ctagccgaagaaaaagggcggtcatcggtatggctaaatataaaacagtaaaagaaaca gaaagcgctgatttaattgttagacgcaggaacgcttccaaggtttaccactttcaaac cagctctaaaggtgaagaatggctaaagcaatgaatgcagtaggttatgatgctatggca gtcggttaaccatgaattgactttggatcagatcagttgaaaaagtttagagggtatgtta gcttcccagtgctaaagtactaacgtttataaagatggaaaacgcgctttaagccttca acgatgttaacaaaaaatggatattcggttatggaattatttggtgaacgacaccagaaca aagacgcctgaacacgtgaaggcattaaaggcggtgaatttagagatccattacaaggt gtgacagcggaatgatgcgtatttataaagacgtatgatacatttggtgttatcacat ttaggaattgatccttcaacacaagaacatggcggtggtgattacttagtgaacaatta agtcacaaatccacaattgaagaacgtattacagttattgatggctcatcacatagta cttcaaaatggtaaatttataacaatgatgcattggcacaacaggtacagcacttgcg aataatcggttaagattacatttaattatcgcaatggagaggtatcgaattataaacggtca ttgatataatgttaangacgttgaataatgtaacacgaacaaagcatttgctgaacaatt aatcaagctgatcaaacatttagagcacaaactgcagaggtaatttccaacaacatacc attgatttcaagaggagaagagatgcggttagaacgcgtgaacaaatttaggaaacgcg attgcagatgctatggaagcgtatggcggttaagaatttctctaaaaagactgactttgcc gtgacaaatgggtggaggtattcggtgctcttatcgcaaaaggttaaggtgacacgctatgat ttaattctcagttattaccatttggaaatagcattgcgcaaattgatgtaaaagggttcagac gtctggagcggttttcgaacatagtttagggcgcaacaaacacacaaaggacggttaagaca gtgttaacagcgaatggcggtttactacatatctctgattcaatccggtttactatgat ataaataaacgctctggcaaacgaattaatgctattcaaattttaataaagagacaggt aagtttgaaatattgatttaaacgctgtatatacagtaacgatgaatgacttcacagca tcaggtggcgacggaatatagttgctgggtgcttagagaagaaggtatttcattagat caagtactagcaagtattttaaaacagctaaccttagctaagtatgatacgcagacaacca caacgtatgtattaggttaaacacagcagtaagtgaacaacacagctaaaggacaacaaggt agcaaaaggtagtaagttctggttaagatacacacaaccaattggtgacgacaaggtgatggat ccagcgaaaaaacagctccaggttaagttgtattgttgctagcgcatagaggaactggt agtagcggtacagaagggttctggtcgcaacaatagaaggagctactgtatcaagcaagagt gggaaacaattggctagaatgtcagtcctaaaggtagcgcatgagaaacagttacca aaaactggaactaatcaaggttcaagcccagaagcgatggttgattattagcaggtata ggtttaatcgcgactgtacgacgtagaaaagctagc</p>
426.	<p>mkalllktsvl1vllfsvmglwqvsnaaeqhtpmkahavttidkattdkqvpptkeaah hsgkeaatnvsasaggtaddtnskvtsnapsnkpstvtvstkvnetrdvdtqastgkpth tatfklsnaktaslsprmfnaanapqttthkilhtndingrlaeekgrvigmaklktvkeq ekpdlmldagdafgglplnsqskgeemakamnavgydamavgnhefdfydqlkklegml dfpmlstnvykdgkrafpkstivtkngirygiigvttpetkktktrpegikgvefrdplqs vtaemmriykdvdttfvvishlgidpsetwrgdylvkqlsqnplkkritvidghshtv lmggiyindalagtgtalanigkitfnymngevsnikpslinvkdvenvtpnkalaeqi nqadqtfraqtaevliipnntidfkgerddvrtretnlgnaiadameaygvknfskktddfa vtnggggirasiakgkvtrydlisvlpfgntiaqidvkgdsvwtafehslgapttqkdgkt vltangglhlsdsirvydinkpsgkrinaiqilnketgkfenidlkrvyhvtmndfta sggdgysmfggpreegisldqvlasylktanlakyddtepqmllgkpavseqpakgggg skgsksgkdttdpiggdkvmdpakkpapgvvlllahrgtvssgtesgtrtiegatvssks gkqlarmsvpkgsahekqlpktgtngssspeamfvllagigliatvrrrkas</p>

427.

atgaataaaaaattcgaagaagaagctcgattttcttccaacaagcttaataagtactca
attagacgtttcactgttagggacagcttcgatttttagtaggagctactttaattttcggt
gttgcaaatgatcaagcagaagccgctgagaataacacaaactcaaaagcaagatgatagt
tcagatgcagtaagtaadaggtaattgttcaaaactattgaacaaactcttctgcaattca
aatgaattctgatatcttgaaacaggttgatgttaactaaagatacaactgaacagcatca
acagaaagaaaaagcaaatataactgaacaagcatcaacagagaagaaagcagatacaact
gaacaagcaacaacagaagaagcgccaaaagctgaaggaacagacaaagttagaaacagaa
gaagcgccaaaagctgaagaacagacaaagcaacaacagaagaagcgccaaaagctgaa
gaaacagacaaagcaacagaagaagcaccaaaactgaagaacagacaaagcaacaaca
gaagaagcgccagcagctgaagaacaaagcaaaagcagcaacagaagaagcgccaaaagct
gaagaacaaagcaaaagcagcaacagaagaagcgccaaaagctgaagaacagaaaaaca
gcaacagaagaagcaccaaaactgaagaacagacaaagttagaaacagaagaagcgcca
aaagctgaagaacaaagcagcaacagaaaaagcaccaaaagctgaagaacaaac
aaagttagaaacagaagaagcgccagcagctgaagaacaaacaaagcagcaacagaaga
acaccagcagtgtaagacacaaatgctaagagcaattcaaatgctcaaccatcagaact
gaggaactcaagttgttagatagctgtcctaagatttatataaaaaatctgaagttaca
gaagcagaaaaagctgaattgaaaaagtattaccaaaagatatttcaaaacttatcta
gaagaatttaaaaaatagctttaagtgaagtacttaagaacagcttaacaaagaaaaac
gcacaccaaagcgaacattccgttcagtaagcagcaatgctagaacaaacaaatgttaac
tattcagcaacagcatttaagagcagctgcacaaagacacagttactaaaaaggaactgg
aactttactgcgcatggagatataatccataaaaacttataaagaagaattccctaatgaa
ggcagcgttaactgcattcaatcaaaacttcaatcctaatacaggaactaaagcgcatla
gaatataatgatataatagattttaataaagactttacaattactgttccagtagcaaac
aacaaccaaaggtataacacagagcagatggctggggcttcagtttactcagggaat
ggccaaagacttcttaaaccaaggtgggtattttaagagacaaaggtatggcaaatgcatct
gggttttaaaattgatacggcatataaatgtttaaggttaaagtcgataaactcgatgca
gataaaacaaacaaacttaagtcaaatggcgagcaaaagttgggttacggtacatttgg
aaaaatgggtgcagatgggtgtgactaaccaagttgggtcaaaatgccctaaatcaaaaag
aaactctgaataaaaaatattttagcagataatacaactaatcatcttgatgggtcaattc
catggccaaagatataatgatgtagatttaaatatgatgcagcaacaggtacaataact
gctacatatgacagaaaaacatggaaagctactacagatgatttaggaattgataaatca
caaaaataataattcttaattacttcaagtcataatgcataatagatattcctaattgga
atgagaacaaacttgaaggtgtaacaaatataacgcctcaagctgatttaattgatgat
gtggaagtacagaaacaaacaaacttccataaaaactattcgtgagtttgatccaactcta
gaaccaggttcacctgatgttattgtacaaaaggtgaagatggagagaaaaacaaact
acacaaactaaagttagacctgatacaggagatgtagttgaacgtgggtgaaccaacaa
gaagttacaaaaaatccagttgacgagatgttacactttacacctgaagaagtaccaca
ggctacaaagatgagttcgatccaaacttaccatttgacggtacagaagaagttaccgt
aaaccaggtcatcaagaatctgaaacaggtgaagtagtaacacctccggttgacgatgtc
acaaaaacttggtccaaaagcagcggaaccagaggttactaaagaagaataccattcgag
aaaaaacgttgagttcaatccagacttaaaacaggtgaagagaagtaacgcagaagga
caactggagagaaaaacaaacaaacgccaacaaacaaatataatccatttaacgggagaaaa
taggcgaaggtgaaccaacaaacagaagtaacaaaagaaccagtagatgaattcacaca
ttcgggtgagaagaagtaccacaaggtcataaagatgagttcgatccaaacttaccatt
gacggtacagaagaagtaccaggttaaccaggtcatcaagaatcctgaacaggtgaagta
gttaacacctccggttgacgatgtcacaaaacatgggtccaaaagcagcggaaccagaggt
ataaagaagaataccattcgagaaaaacgtgagttcaatccagacttaaaacaggt
gaagagaagtaacgcaagaaggacaaactggagagaaaaacaaacaaacgccaacaa
atttaattccatttaacgggagaaaaagtaggcgaaggtgaaccaacaaacagaagtaacaaa
gaacctagatgaattcacacaattcgggtgagaagaagtaccacaaggtcataaagat
gagttcgatccaaacttaccatttgacggttacagaagaagtaccaggttaaacaggtatc
aagaatcctgaacaggtgaagtagtaacacctccggttgacgatgtcacaaaacatgg
ccaaaagcggcgaaccagaggttactaaagaagaataccattcgagaaaaaacgtgag
ttcaatccagacttaaaacaggtgaagagaagtaacgcaagaaggacaaactggagag
aaaaacaaacaaacgccaacaaacaaatataatccatttaacgggagaaaaagtaggcga
gaaccaacaaacagaagtaacaaaagaaccagtagatgaattcacacaattcgggtgagaa
gaagtaccacaaggtcataaagatgagttcgatccaaacttaccatttgacggttacagaa
gaagtaccaggttaaccaggtcatcaagaatcctgaacaggtgaagtagtaacaccacca
gtagacgatgtcacaaaacttggtccaaaagcagcggaaccagaggttactaaagaagaa
attccatattgaactaaacgcgtattagatccaacaatggaaccaggttagtcttgataaa
gtagctcaaaaaggtgaaaatgggtgaaaaacaaacaaacacaaactacaatttaacca
ttaacgggagaaaaagtaggcgaaggtgaacaaacggaagtaacgaaagaaccaata
gacgaatgtttaactatgcacctgaatatttctctatgggtacaggtgaagaattgat
ccaaacttaccagaaggtgaactaaagttaaccaggttaagatgggttgaagaatcct
gaaactggagaaatcattgaagaaccacaagatgaagtaattcatccatggttgctaaagat
gattcagatgaggacagcagattcagacgcagatagcgattctgatgcagacagcagctca
gacgcagatagcgactctgatgaggacagcgattcagacagcgatagcgattcagattca
gatagcgactctgatgaggacagcgattcagacagcgatagcgattcagacgcagatagc
gattctgatgcagacagcgactcagacgcagatagcgactcagattcagacgcagatagc
gactcagattcagacgcagatagcgactcagattcagacagcgactcagacgcagacagc
gactcagattcagacagcgattcagacgcagacagcgactcagacgcagatagcgactca
gattcagacagcgattcagacgcagatagcgattcagattcagatagtgactctgatgag
gacagcgactcagacgcagatagcgactctgatgaggacagcgactcagacgcagatagc
gattctgattcagacagcgattcagacgcagatagcgactcagacgcagatagcgattca
gacgcagatagcgactcagacgcagatagcgattcagattcagatagcgactctgatgag
gacagcgatagcgattcagattcagacagcgactcagacgcagatagcgactcagacgc
gatagcgatagcgattctgatgacagacagcgactcagacgcagatagcgactctgatgag
gacggcgactcagacgcagatagcgattctgatgacagacagcgactcagacgcagatagc
gattctgattcagacagcgattcagacgcagatagcgactcagattcagacagcgattca
gacgcagatagagatcataatgacaaaacagataaaacaaataaagaaggttaccagat
actggtaagtagctcaaaaataatggcacattatttgggttcaactattcgtcgcttgg
ggattattcttagttggcagacgtcgtaaaaacaaaaataatgaagaaaa

[illegible]

433.	atgaatcaatatcattctaatgcacaacaaccaagtgcatggcggttttttgcctatagt ttagtgggcatactatgtttctttatccctttacgattaatggtaacaacactatttcc gtcgatcatgttcatctagccattcgctcaatcataggtccacttatgccctatgttgca ctgattatgattttaattggtacagcggtaccacatagtgagacgtacttttatgacttca atcacaaacttggcattacattattttaaagttgcaggtgcaatgacgtatataatgtat gtattttaaactcggtccatcaatactattttaaagctaaactatggctcggttttggttgaa aaattaatgatgccattaagtatcttaattccagtaggtgcaatggcggtttctttatta gtgggctatggcctattagaatttgcgggtgtttatggagcctattatgagacctatt tttaaacaccaggaaaaatccgctgctgcatgcagtggttctggttgcggcagttattcc ttaggattattgattactaatcggtgtctataagcaagggtgtacaacaaacgagaagcc acgattattgcgactggcctttcaacagttttagcaacttttatgattatcggttgctaaa actttaggatttaagcccgattggaatttatacttttggataacttttagtcatcacattt gtcggtgactgcaattactgcatggctaccgccaatcagcaatgaatcaacagaatattat aacggacaagaaggagaacaagaagtgtctattgaaggaagcagactgaaaactgcata gcagaggcgatgaacaaaatgcattaacaccatctctcgtagaagaactgttgggacaat ttgaaagacggttttagaaatgactgttggtattttaccttctattatcgattgggtttt ttaggactgattgtagcgaactatacaccattcatgattggcttggctatatcttctat ccatttatttatatttcccaattgctgacagcgctttactagcaaaagcgtcagcgatt tctattgtagagatgtttctaccatctttggttagtaactaaagctgcaatgagtaactaaa ttgtcgctgggttagtaagcgatcagccattatcttttctcagcattagtgccatgt atactgcaactgaaataaaatacctgtctggaaactcatcatcatttggtttttacgc gtggcggttgcgtatttaaccaccccgctgctttacttatttttggaa
434.	mnyqhsnaqpsawrrffvyslvgilcfffiftngmtifvdhvhlairstiigplmpyva limiligtalplvrrtftmtsintlvitlflkvagamigimvfvkigpsilfkanygpflfe klmmpslilipvgalalsllvgyllefvgvymepimrpi fktpgksavdavasfvgsys lgllitnrvykqgmynkreatiiaatgfstvsatfmilvaktglgmphwnlyfwitlvitf vvtaitawlpisnesteynggegeqevalegsrlktayaeamkqnaltpslvknvwdn lkqglemtvgilpsilslsigflglivanytpfidwlgvfyfypfiyfiyadiqallakasai sivemflpsllvtkaamstkfvvgvsvsaiiffsalvpcilateikipvwklliiwflr valsllitipvallifg
435.	atgaaatagagaacaatttgctaaaaaccagtttagcactaggcgcttttaacaacaggcgca attacagtaacgacgcaatcggtcgaagcagaaaaatacaatcaactaaagttgacaaa gtaccaacgctttaaagcagagcgattagcaatgataaacataacagcaggtgcaaatcca ggcgaacacagcagctaacacaagacaagaacgcacgcttaactcgaaaaggcacca aataactaatgaggaaaaaacctcagcttccaaaatagaaaaaatatcacacctaacaacaa gaagagcagaaaaacgcttaataatcagcaacgcccagcgcttaaacagaacaatcacaa acgacaacccgaatccacaacgcccgaactaaagtgaacacacccatcaacaacacg ccacaacccaatgcaatctactaaatcagacacaccacaatctcaacccaataaacaagca caaacagatagactcctaaatagaaatgaaagatttaagagcggtattatacaaaaaccgattt gaatttgaagaacgatttggatttatgctcaaaacctggacgacgggttaggtttatgaat gttattccaaataggttcatctataaaatagcttttagttggaagaatgagaaaaaatat aaagatggaccttacgataaatatcgatgtatttatcggttttagaagacaataaatatcaa ttgaaaaaatattctgtcggtggcatcacgaagactaatagtaaaaaagttaatcacaaa gtagaatttaagcattactaaaaaagataatcaaggtatgatttcacgcgagtttcagaa tacaatgattactaaggaagagatttccctgaagagcgcttgattttaaattgagaaaaacaa cttattgaaaaacataatctttacggtaacatgggttcaggaacaatcggtattaaaatg aaaaacggtgggaatatatcggttgaattacacaaaaaactgcaagagcatcgatggca ggcactaatattgataacattgaagtgaatataaaa
436.	mkmrtaiktslalgl11ttgaitvttsvkaekigstkvdkvptlkaerlaminitagans attqaantrqertpklekapntneektsaskieikisqpkqeeqktlnisatpapkqegsq tttesttpktkvttppstntppmqstksdtpqspstikqagtdmtpkyedlrayytkpsf efekqfgfmlkpwtvtvrfmnpvnpnrfiykialvgkdekkykdgpydnidvfiulednkqy lkkysvggitktnskkvnhkvelsitkkdnqgmisrdvseymitkeeislkeldfklrkq liehnllyngmgsitviki mknggkyt felhkkqlqehrmagtnidnievnik
437.	atgaaataaacaacgatttgctaaaaaagtttagcactaggcgcttttaacaacagggtgta atcacaaacgacaacgcaagcagcaaacgcgacaacaccatcttccactaaagtgaagca ccacaatcaacacccgctcactaaaaatagaagcaccgcaatcaaaacaaaacgcgaca acaccgcccctcaactaaagtagaagcaccgcaacaaacgcaaatgcgacaacacccgct tcaactaaagtgacaacacccctccatcaacaaacacgcccacaacccaatgcaatctactaaa tcagacacaccacaatcgccaaccacaaaaaagtagcaacagaaaataatcctaaattt aaagatttaagagcggtattatagcaaaccaagtttagaatttaaaaatgagatttggtatt attttaaaaaatggacgacaataagatttatgaatgttgcagattatttcatatat aaaattgcttttagttggaagaatgataaaaaataggtgaaggagtagataggaatgtc gatgtattttgctgttttagaagaaaaataattacaatctggaaaaatattctgtcggtggt atcacaaagagtagaataaaaaagtttgatcacaaagcaggagtagaataactaaggaa gataataaaggtagaatactctcatgatgtttcagaattcaagattactaaagaacagatt tccttgaaagaacttgattttaaattgagaaaaaacttattgaaaaaaataatctgtac ggtaacgcttggttcaggtaaaaattgttattaaaaatgaaaaacggtggaagtagacggtt gaattgcacaaaaaatacaagaaaatcgcatggcagatgtcattaatagtgacaaaatt aaaaacatcgaagtgaatttgaaa
438.	mkittiaiktslalgl11ttgaitvttsvkaekigstkvdkvptlkaerlaminitagans tppstkvapqgtanattppstkvttppstntppmqstksdtpqspsttkqvpteinpkf kdrlayytkpslefekneigiilkwttrfmmvvpdyfiykialvgkdddkygegvhrnv dvfvleennynlekysvggitksnskkvdhkagvritkednkgitshdvsefkitkeqi slkeldfklrkqlieknnlyngvsgkivikmknggkyt felhkkqlqenrmadinseqi knievnlk

439. gtgaattatcgtgataaaattcaaaagtttagtattcgttaaataacagttgggtacattt
tcaactgtcatttgcgacattgggtatttttaggattcaataacacacagcacatgctgct
gaaccaaatacaaccagcaagcgtgggttaaacgaaacaacaaagttaataatgaacagact
gagaatcggagaatctcaagtacaaaattctcaaaaattcaaaaaatgggtcaatcatatct
gctaccatgaaatgagcaaccaaataattagtcgaagctaaatttagtagatcaaaaagta
ggcgaatcatctactactaatgatgaacaaccagcattctcaaaaatgtaaatcaaaagaa
gattcggcaacggctgcgacaacacacacagataaagaacaaagttaagcataaaacaaaac
gaaagtcaatctgctaataaaaaatggaaacgacaatagagcggctcatgtagaaaatcat
gaagcaaatgtagtaaacagcttcagattcatctgataatggtaacgtacaacatgaccga
aatgaatatacaagcgttttttgatgcaaatatcatgattatcgctttattgaccgtgaa
aatgacagattctggcacatttaactatgtaaaaggcatttttgataagattaaatcgtta
ttaggcagtaattgatccaataaacaataaagacttgcaacttgcatatacaagaattggaa
caagctgttgctttaattcgtacaaatgctcaacgtcaacagactagccgacgttcaaat
agaattcaaacggcttcgggttagtcaagagctgcagagcctagatcagttacagactat
caaaaatgcaaatctcatcatattatgttgaaaatgctaattgattgggtcggctatcctgt
gggtacatatataatgcttctagtaaaagggcgccatataatttaccacacacacatgg
aatacatctgaagcctctgactcaaaaggaaattgctcttatgacagcgaacaaacatgga
gacgggtaccacatgggttattaagtttaataaaggacatgctccacatcaaaaatgatc
ttttgggttgctattaccagcagaccaagtgcagtaggaagaactgactttgtaacagt
aattcagatggaaacaaatgtacaatggagtcagtgagcagggagcaggtgcaataaaacca
cttcaacaaatgtgggaatattggagtaaatgatcctcatgcttcacatgactttaaaaa
agaaatagaaatggcgaagttaataatgactggcgaactgtccatatttatcttagaa
gatttatctagagcaggtgatttttagtgaaagctggagcgacacctgctactaaagct
tttggttagacaaaattttgaaatataatgggtcaaaaacctgctgaatcaccgggtgtt
cctaaagttatactttcatcgggtcaaggtgatgcaagttatacaatttcatttaaaaca
caaggtcccaactgttaataaaattgtactatgcagcaggtggggcgtgcttttagagtaca
caatttttagtgacagtcacatactacgtgaatcaacgcaagaccatcaacaacgtctt
aatgggttaagacaagtggttaactcgtacatatcgcataggtacaactaaacgtgtagaa
gtgagctcaagggaaatgtacaaacgaaaaaggatttagaaagtacaacctaataatagat
gattttggtgatgactccttaagttatgttaagacggcagtaataaagtgtaggattt
tattcgaataatgcaaaactaatgcttttagaccgggtggagcccaacaataaatgaa
tatcaatgaagtcactttttagtcaaaaaatacaagaagcagcaagaacttagaaac
ccaataagatttaattgattgggtttcgtactatcctgatgctttatggttaagtgaacttta
gttccgttaacttaacgggtattacctgaaatccaacataataatataattctttaaaaat
gacgatactcaaaaatttgctgaaaaacacattttcaaaaacagctgggcatccagtttct
tatgtatatgcaggtacaaaggggaatgcttccgtgaatttaggtggtagcgttaacatct
attcaacatcagttatttaatttaacaagttaatgagaattttacagataaagattggcaa
attacaggtattccggctacattacacattgaaaactcgacaaatagacctaaatggc
agaaacgcgaatattgaactgttggttaactattacacggggatttactttggaacgata
cgttttgagcgttaagaacaaatatttcgaatctcgtgttaaacacacacacacacaaat
acaacgacagctgagcaatgaagaggtacagcattacaaaagtgcctgttaattttcg
ggaataccgttggtatccatcggtattggtttatttagttgcaccaacaaatcaaaactacg
aatgggtggttagggcagatcaaataccatctgggttatcagatacttgcgactgggtaca
cctgatgggggtgataatacaattactatacagaccgcaagattatgtgtattcatacca
cctgttaggttaacaaattagagcagtagtttatataataaagttagttgactcctaattg
agtaattgctgttactattttgccagatgacattccaccaacaataataatcctgttgga
ataaatgccaataactactcagggcgacgaagtcaactttacaattgggtgctcctgataga
cattctcgggtataaaaaatacaactattacgacattgcccgaatgggtggacatcaaat
acaaaagcggataagaataatgggtcattatctattacaggttagagtgagtagaatcag
gcaatttaacagtgatattacatttaaaagtgcagcgacagacaatgtcaataatcagaca
aatgtagtcaactcaaacatggttcaattcagtgtaggttaaaatttagtgaagatgctcat
ccgattgatttaggaaatactgagaaagttgttagtgatcaatccgactgctgtatcfaat
gatgaaaagcaagcacaataactgctcctttatgaataaaaaacaaaataaagaggat
ttagcatcaactgatccagtaactgctgataataatggtaattgtccatattacattaccgt
gatggctcatcgcacaacgcttgatgctacaaatggtgatgacatcagcaacggttggtgaa
cctgaataccaaactgtcaatgctgctaaaacgcaacggtaacgattgctaaaggacaa
tcaatttagtattgggtgatttaaaacaaatatttactttaagtaattggacaacctatcca
agtggcacattttacaaatattacatctgataagaactattccaaactgcacaagaagttagt
caaatgaacgcagggcagcaggttataccatataactgctacaaatgcgtatcataaagat
agtgaaagacttctatatttagtttgaaaatcatcgatgtgaaacacacagaaggcagta
cgtgttatcgtacataacatattgatttaactactgatgaaatctcaaaagttaaaacaa
gcaatttataatgcaaaatagagatgtaattacgcttgccgaaggtgattttcagttaca
aatacacctaattgggtgctaaatgtaagtactattacagtaaatattataaaggctgatt
acgaaatcatctcgcgtcaaacctagctaatatgaatttcttgctgtgggttaatttccca
caagatatacagtgacatggagcaatgcaaaaattgcaaacagacacacagatgggtgt
ttatcatggtctgatgaccataaattcttaatttatcgttatgatgtacatttaggtact
caaatcagcgaatgatatttaacaattgtaaaagcaacaaactacagtgctcggattg
cgaaataacatctggttaattgaaaatacacaagcagaagctggcggaagacctaaactt
agaacgactgggtattacaaatcaaatgcgacaactgatgggtcaactcaatttactgtg
aatggtcaagtgattcaaggttagacatcatcaacccttcaaacggttatgggtgggcaa
cctgttacaaattcaaatactcgtgcaaacatagtaactcaactgttggttaacgttaaac
gaaccggcagctaatgggtgctggcgcatttacaattgaccacgttgtaaaaagtaattct
acacataatgcaagtgatgagtttaaaagcaggttatacttaacggcattatgggtcca
aaacaatatgttgaaactttaaatcaaaatcacaggaaatactactgacgctatttaacatt
tattttgtaccaagtgacttagtgaatccaacaatttcagtaggttaattacactaatcat
caagtgcttccaggtgaacatttcaaaatactattacagcgaatgataactttgggtg
caactctgaactgtaccaaatacatcaaaattacaggtactgttgataataaacatcaa
catgttctgcaacggcaccaaatgtgacatcagcaactaaatagacaatacaatttatta
gcaactgatacaagcggaatcacagctacaacttcgttcaatgtaacagtgaaacctttg
cgtgataaatacaggttggtacttcatcaacggctgctaatctgtgagaattgccaat
atttcgaataatgcgacagtatcacaagctgatcaaacgacaattatttaattcgttaacg
tttactgaaacagtaacaaatagaagttatgcaagagcaagtgcaatgaaatcactagt
aaaacaggttagtaattgctgactgctggaataatgccaatgtaacagtaactgttact
tatcaagatgggaacacatcaacagtgactgtacctgtaagcattgtcattccagaaatc
gttgacattcgcattacactgtacaaggccagacttcccagcaggttaattgggtctagt
gcatcagattactttaagttatctaatggtagtgacattgcagatgcaactattacattg
gtaagtggacaagcgcaataaagataataacagttatgggtgaagataaactgttaact
gcacatactttaaattgaggggaacacacgcgattacgaaaacagcaacataaagta
gtaagaactgtaccgaacatgcttctgaaacagccagaggtgtttataccaggtgtt
tcagattatgtagtgcgaacaaatattgtaagccagtaaaatattcttggtcgacaat
cgcaacataatgaatttccaatttggtggaacataatgggtcctaacaagaatgttgtagg
atactactcgtcttattagagtgacatagataatagacaacagaagatttaactatt
ttacttaagtttaaacctgaccacctaagattgacgcaaacctgtgacataaagca

ggtcttacaacccaagaattaaagttaataacgtattaaataactcgtcagtaaaatta
 tttaaaagcagataatcacaccattaaatgtcacaataattactcatggtagcggttttagt
 tcgggttgtagcagtaagtgaacggttaccacaaatggcgaattaaagcaaaatctcaatt
 tcaatgaacaatgtgacgtatagcagcgaacacatggtaagttgttacagtaaca
 agaaatgaatctgttgattcaaatgacagtgcaacagtaacagtgacaccacaattacaa
 gcaactactgaagcgctgtatttattaaagtggtgacgggttttgatttcggacagta
 gaaagatttattcaaacccgccacatggggcaacgggttgcatggcatgatagtcagat
 acatgggaagaatacagtcggttaacactcataaaactgcggttgtaacattacctaattggt
 caaggtacgcgttaattggaagtccagtcacagtttatccagttgtcaatgcaaaaggcg
 ccactacgctgatgtgaaaggtcaaaatttgactaatggaacggatgcatgaaactacatt
 acatttgatcccaatacaaacacaaatgggtatcactgacgcatgggcaaatagacaacaa
 ccaataaaccacaacagcagcggtgcaacatttaaatgtcgatgtcacatatccaggtatt
 tcagctgtcaaacgagttccgtgtactgttaagtatatcaatttgaattcccacaaact
 acttatagcacaacgggttgaggcactttagcaagtggtacgcaagcatcaggatagca
 catatgcacaaatgctactggtttaccaacagatggattacgtataaatggaatcgtgat
 actacaggtacaaatgacgcaaacgtggtcagctatgataaaaccgaatgtggctaaagtc
 gttacgcgcaaaatgatgacgtcatctataacggacatacttttgcaacatctttaccagcg
 aaatttgtagtaaaagatgtgcaacacggaacacaaactgtgactgaacacagcgagga
 gcgattacaaattgcacctggagcaaacacaaacagtgatcacatgcgggttaacgtaacg
 acatacgcctgatataaattagttataaacgttaattgtaacgttgtagcagacattacagct
 cgcaataaactacgagtcacatgggtgaaagaagcatctgcagcaactgttagcaggtattgct
 ggaacttaataatgggtattactgttgacgaggtactttcaaccctgctgatacaattcaa
 gttgtgcaacgcaagggaagcgagagacagtgatgtagagcaacgtagtgatgatttc
 acagttgtgcacacacacacgaacgaacgagcactactaagatttggaacaaatggtcatatt
 gatatacgccttaataatccatcaggacatttaatttaacccaactgaagcaatggatatt
 gcttacactgaaaaagtggttaattggtgcgaacatagtaagacaatttaattgtgttcgt
 ggtcaaaataatcaatggacaattgcgaataagcctgactatgtaacgttagatgcacaa
 actggttaagtgacgttcaatgccaatactataaaacaaattcatcaatcacattact
 ccgaagacggttacaggtcactcagtaagtagtaataccaagtacatttaactgcacggca
 gctcatcactgcaacacacactgaattgtgaaagatttggttcaaatgtaacagcagct
 gaaatttaacactcaggttcaagttgctaataaacgtaactgcaacgatataaaatggcaca
 gcaatgcctactaatttagctggtggttagcacaacgacgattcctgtgacagtaacttac
 aatgatggttagtactgaagaagtacaaggtccattttcacaaagcggataaacgtgag
 ttaattcacagctaaaaatcatttagatgatccagtaagcactgaaggtaaaaagccaggt
 acaattacgcagtaacataatgcaatgcataatggcgaacacacaaatcaatctgcgaaa
 acagaagcacaacagtgatttaataatgagcgtgcaacacacacaaagtttctgacgca
 ctaactaaagttcgtgcagcacaacacaaatgattgatcaagctaaagcattacttcaaaat
 aaagaagataatagccaatttagtaacgtctaaaaataacttacaagttctgtgaaccaa
 gtaccatcaactgctggtatgacgcaacaaagttatgataactataatgcgaagaagcgt
 gaagcagaacactgaataaactgcaagctcaacgtgttattgacaatggcgatgcaactgca
 caacaaatttcagatgaaaaacatcgtgtgcataacgcatttaacagcattaaaccaagcg
 aaacatgatttaactgcagatacacatgccttagagcaacgagtgcaacaaatgtaactgc
 acaggttacaacgactggttaagaagcggcgcaagttactgcttacaataatctgattcgt
 gcaattcaagtgacttaacaagtgctaaaaatagcgttaagctatttattcaaaagcca
 ataagaacagtaagaagtgcaatctgcgttaacaaatgtaaatcgtgtcaatgagcga
 ttaacgcaagcaatataatcaattagtagccttttagctgataatagtgctttaaaaactgct
 aagcagaacacttgatgagaatcaataaactcagtaactactgattgtagcacacaaatca
 caatccaagcatatgaaaaatgctaaacgtgctgggtcaaacagaatcaacaaatgcacaa
 aatggttattaacaaatggtgtagcagactgacacacaaatgcccgcagaaaaacaaagta
 gaagaaaaataataagctttaaacaacgaatgtgtgatttaactccagactttggcacca
 ttcaaaactgcaaaactcagttgcaaaatgataatgtagcgaacagcagtagcagctggt
 atgacaagcgcactctattgacgactttaatgaaaaactttcagcagctagaactaaaaat
 caagaaattgactggtattagcctccatccagatgttgccgacaatcagtcacaaacgtg
 acagcagcgaatgcccgttaaatcagcacttgatcaagcagcgaatggcttaacagctcgt
 aaagcgccttttagaaaaatgcgaacaaatcaactacaatatagattgacacgcaacaaagt
 acaaactggtatgacacaaagactctataaatgcatacaatgcgaagtttaacagctgcagct
 aataagatttcaacaaatcaatcaagtttagcaggttccacgactgtagaacaaatataat
 acaaaatcagctcagcaaaatcaagctaaatctgatttagatcatgcagctcaagcttta
 acaccagataaaagcgcgcttcaaaactgcgaacacgcaatttagaacaagcatttaatacaa
 ccaacggtatcaacaggttatgacgaccgcttcgttaaatgcttacaacaaaaattacaa
 gcagcgtgcacaaagttaactgaaatatacaaggttggaatggcaacccaaactgtccaa
 aatataatgataaagtgacagaggcaacacagcgaaggtcaatttaaatcagcagcgt
 caaggttttaacattagatagacagcagcgttaacacattacatggtgcatcttaactta
 aaaccaagcacaacaaataatttcacgcaacaaatataatgctgctcaaaatcatgctgcg
 ctgaaacaaatlaagttaacattacggctttaaatactgcatgacgaatataaagac
 agtgttgccgataataatacaatataatcagatcaaaattacactgacgcaacacacagct
 aataaacaagcgtatgataatgcagtttaattgcccgttaaaaggtgctattggagaacgact
 aatccaaacgattgattgtaacacagtgaaacaaaagcagcactctgttaaatcgacgaaa
 gatgcttttagatggttcaacaaacttacaacgtgcgaacacagaagcaacaaatgcgatt
 acgcatgcaagtgatttaaaccaagcacaacaaagatgcatttaacacaacaaagtgatag
 gcacaaaacgtgcaagcagtaaatgatattaaacaaacgactcaaaagcttaaatactgct
 atgacaggttttaaacgtggcgttgcttaatacacaacaaagtcgtacaagtgataattat
 gtcaacgcagataactaataagaaaaatgatatacaacaaatgcatacaacacacacagct
 attatttaattggttaatgcacaacatccagttataacacaaagtgatgttaacaaatgcttta
 tcaaatgtcacaagttaagaaacatgcattgaaatggtgaagcgaatgaaatgctgcgaaa
 caagaagcgaatactgcattaggtcatttaaacaaatttaataatgcaacacgtcaaaac
 ttcaatcgcgaatttaattggtgcccacaaatttgatgcagtttaatacaattaaagcaaaat
 gcacacaaactgaaatagtgcaatgggttaacttaagacaagctgttgagataaagatacaa
 gtgaacagctacagaagattatgcggatgcagatacagctaaacaaatgcataataacagct
 gcagtttcaagtgccgaacaaatcatataacacacaaatccaaacagctctgtgttgat
 gatgttaactgctgcaacttcagctgttacttctaataaaaaatgcattaaatggttatgaa
 aaattagcacaacttaaaacagatgctgcgaagcaatttgatgcattaccacatttaaat
 aatgcaacaaaagcagatgttaaatctaaaatttaattgctgcatcaaatattgctggcgta
 aatcaggtttaaacacaaggtacagatttaaatcacagcgtgggttaacttgcaaggtgca
 atcaactgtgaacaaacgacgcttaatagtcacaaactatcaagatgcgacacactagtaag
 aaaaacgcatcacaaatgcgggtacaagctgcgaagatattttaataaatacaaatggt
 caaaataaaacggaagatcaagttactgaagcagtaaatcaagtgaaattctgtcaaaat
 aacttagatggtacgctttatagatcaagcgaagcaaacagcaaacacagcagtttaaat
 aatagcagcatttaaacactgcacaaaaaacgaatttaacaaacaaatataatggtggt
 actactgtcgtggtttcaaacggttcaatcaaatgccaatcacattagatcaagccatg
 aatcaggttaagacaagattatgccaacaaagatgcgactaaagcaagtgaaattacgta
 gatgcttaataatgataagcaaacagcatataaacacagcagtagctgctgctgaaacgatt

attaatgctaatagtaatccagaaatgaatccaagtacgattacacaaaaagcagagcaa
 gtgaatagtctttaaaccgacttaacgggtgatgaaacttagctgctgcaaaacaaat
 gcgaaaacgtacttaaacacattgacnagtattacagatgctcaaaagaaatattgatt
 agtcaaaattactagtcgcaagagtgagtggtgtgatactgtaaaacaaatgcgcaa
 catctagaccaagctatggctagcttacagaatgggtattaacaacgaatctcaagtga
 tcatctgagaaatctggtgctgatacaaaataaacacaaagagtgataatgctatt
 actgcagcgaagcgatttttaataaatacgacaggtccaaacactgcgcaaaatgcagtt
 gaagcagcatatacaacgtgttaataatgcgaaagatgcattgaatgggtgcaaaatta
 attgcagctcaaaacgcagcgaacacatttaggtactttaacgcatactacacagct
 caacgtaatgatttaacaaatcaaatttcacaagctacaaacttagctgggtgtgaatct
 gttaaacaaatgcgaatagtttagtggtgctatgggttaacttaacacggctatcaac
 gataagttaggaacatttagcgagcgaacacttctggatgctgtagcgaacaaacgta
 gcatacaatcaagctgtatcagcagcgaacacttttaataaacaacactggaccgaat
 acagcgaacacgcagctcgaaacagcacttaataatgttaataatgcgaaacatgcatt
 aatgggtacgcaaaacttaacaaatgcgaaacagcagcattacagcaatcaatggcgca
 tctgatttaaatcaaaacaaagatgcattaaagcacaagctaatgggtgctcaacgc
 gtatctaatgcacaagatgtacagcacaatgcgactgaactgaacacggcaatgggcaca
 ttaaaacatgcgcatcgagataagacgaatagcttagcaagcagtaaatattgttaatg
 gatagcactaaacaaatgcttacacaaactaaagttaacaaatgctgaacatattatagc
 ggtacgcgaacgggtgttacgacaccttcagaagttaacagctgcagctaatcaagttaac
 agcgcgaaacaggaatataatgggtgacgaaagattacgtgaagcaaaacaaacgcgaat
 actgctattgagtcattaacacaatataatcacactcaaaagctaaatttaaaagacaa
 gtgggacaaacgcaatagattagaagcgtacaaactgttcaaaacaaatggacaagcattg
 aacaatgcaatgaagggcttaagagatagttatgcttaacgaacacacagctcaaaacaa
 caaaactatacagacgcaagtcggaataacacaaatcaacataataatgcgctgtgta
 gcgaaggttatcatataacaaactaaacacgcgactatggatagctagtcgattaccaa
 gctacaaacacagtgaaatgcttaaaatgggttaaaacgggtgctgaaacacttaagaat
 gcacaaacacagctgaagcaaaacttaatacatattcacacttaacaaataacacaa
 tctgcatctcatcaaaatgatcgctgcaggtcatgtgagtgaggttaactgctactaaa
 aatgcagcaactgagttgaatagcgaatgggttaacttggaaacagctatccatgataca
 aacacagcttaaaacaaatggttaaatctactgatgcagataaagctaaacgtgtagctat
 caaaatgcggttaagcagagctgaagcaatctgaaataaaacgcaaggtgcaaatagctct
 aaacaaatggtgaagcggtctattcaaaatggttcaagtgctaaacaaatgcattgaatgg
 gatcaaaacgcttaaaatgcgaagatgcagctaaacaaatgcattaaataacttaacgtca
 atttaataatgcacaaacacgctgacttaacaaactaaatgataacgaacacagctagct
 ggtgttgaagctgtatctaatagcagctacacaaatgaatacagcagtggttaacttgcaa
 aatggtatttaagtataaaacaaatcacactagcaagtgaaacactatcatgtagctgata
 gataagaaacgcttatactcaagcggcttacgaacgcagaaatatttttaataaaat
 agtggatcaaaatttagacaaacactgcccgttgaacacgctgtgtcacaaagtgtta
 aaggtgcccataatggtaaccataatatttagagcaagctaaatcaaatgcaaacactact
 ataaacggacttcaacatttaacaaactgctcaaaagataaaattgaacaaacaaatgcaa
 caagcacaacaaatggtgaggtgtagatactgtttaaatacaagtgccaaacacataatgg
 gctatgggtgagcttaagaaatagcatacaagataacacagctacgaaacaaatggccaaac
 tatcttgatgctacagaacgtaacaaacaaactataacaaatgctgtttagatgctaat
 ggtgctcatatgcaacaaagcaatccaaatattggatgctaatgcaataaacaaatgcct
 acacaaagtgacatacaacgaacaaatgcattagatggttacacataatttaacgaagcga
 caaacagcaacaaatgcatgatggtgctactaacttaataaagcgaacaaatgagcgt
 ttaaaagcacaagttacaagtcgcaacgctgttgaacaaatgtaacaaatgtaacaaact
 gcaaatgaacttaatacagctatgggtcaattacaacatggtattgtagtgaaatgca
 acaaacaaactcaaaatattcgtagcgtgaacaaatgaagaaactgcttatgatcaa
 gctgtagctgctgcaagcaattttaataaacaacacaggttcaaattcagataaagca
 gcagttgacgctgcatatacaacgaatgaacagctgaagagatgcattgaatgggtgagca
 aaactggcgaagcgaagggcgagctaaacaaacttaggcactttaaacatattacg
 aatgcacaacgctactgacttagaagggccaaacaaatcaagcagcagctgtttagtggtt
 aatactgttaaaacaaatgccaaatattagacggcgcaatgaatagcttacaaggttca
 atcaatgataaagatgcagacatttaagaaatcaaaatattcttgatgaggtgaatcaaaa
 cgaatgcataacgaagctgtacacagcggctgaagggcatttttaataaacaacaaactggt
 ggttaacaaatcaaaagcagcgttgataatgcatataatgcagttacaagagcgaagcg
 gctttaaatgggtgtaacaaatgaagaaatgcgaaacactcagcaacaaatcagattggt
 ggtttacttaacttaacaaatcaaaaagacaaacttgaagcactgaagttgaacaaagc
 caaaatagcaggtgttaaatgggtttaaagataaaggttaacgttaaatcgttgaatg
 ggtgcattacgtacaagttacaaatgataatagcagcaaaacaaatgcaaaatattctt
 gatgcatctgacagcaacaaataatataactgctgttaaatgcaaatggtgtt
 attaatgcaacgaacaaatccaaatattggatgctaatgagtttaatggcatggcaaatcaa
 gtcaatacaacaaagcagcgttaaatgggtgcacaaacttagctcaagctaaacaaat
 gcgacgaacacaaatcaaacgcacatgacttaaaccaaaacaaacaaatgcaatcaaaa
 acacaaatgcaacaaatgcacaaatgctatctgtagcaaaatcaacactgaacactgaac
 gaattgaacagtgctgacagcagcacttaagcagctattgctgataaagaaagacaaaa
 gcaagcggtaattatgtcaatgctgacagaaacacgctcaagcgtatgattcaaaatg
 actaacgctgaaatattcattagtggtacacgaatgcgacatttaacagtcattgacgta
 aatagtgccgcatcaacagtcattgcccgttaaacacgcttaaatgggtgataacaaactta
 cgtgtgagcaagagcagcgaacaaatgaacggcttagcacaattgaataatgca
 caaaagcaaaatataaagacaaagttcaagtgcaactacattagatgggtgttcaact
 gttaaaaatagttctcaacggtgaatacagcagatgaagggcttaagagatagttatgca
 aatgaagcaacaaatgaagcaggtcaaaactacactgacgcaagtcacaaatattcgttaac
 gagtacgacagtcagttactgcagcaaaagcaatcatataacacatcgaacccaacg
 atggaaccaaactactattacgcaagtaacatcaacagtgacaactaaagaaacagcatt
 aatgggtgcgcaaaacttagctcaagctaaagaaactgcgaaacaaacttgaataactta
 acatcaatttaacaaatgcacaaagatgctgttaacgctgacattgattggtgcaacaa
 gtatgctgtgaatacaagaaactgcacaaagcaacagaaatataacacgaatgcaatgca
 ttacaaatggtatcaatgtagagacacaaacaaacaaactcagaataacttagatgca
 gagcgaagtgaagaaatcagcttatgatacagcagtaaatgcagcgaagcaattttaaca
 aaagctagtggtcaaatgtagacaaagcagcgtgaacaaagcattgcaaaatgtgaac
 agtgcgaagcggcgtgaacgggtgagcgaatataatgaagctaaagcagctgcgaa
 caacggttaggtacatttaacacacatttaataatgcacacgctacagcgttagacaaatga
 attacacaaagcaacaaatgtgaaggtgttaatacagttaaagcgaacgcaacaaatga
 gatgggtgctatgggtcaattagaacacataatcgtgataaagacacagcttacaaggt
 caaaatattcaagatgctgtagtgcataacgaactgcttattctcaagcagtaaatgca
 gcagcaactattttaataaaacagctggcggttaatacactaaagcagatggtgaaga
 gcaatgcaagcgtgtacacaaagcaaatactgcattaacgggtattcaaaacttagatcgt
 gcgaacagggctgtacacagcagctacaaatgcttcggacttaatacaaaacaaaa
 gaagcattaaagcacaagtaacaaagtcaggagcgttatctgcgcaaatgggtgaa

catactgcgactgaattaaatactgcgatgcagcgtttaaagcgtgccattgctgataaa
gctgagacaaaagctagtggttaactatgtcaatgctgatgcgaataaacgtcaagcatat
gatgaaaagttacagctgccgaaaatacgttagtggttacaccaacacacgtaaca
cagcagatggttacaaatgcagcaacgcaagtaacgaatgctaagacgcagttaaacggt
aatcctaatttagaagtagcgaacaaaatgctaactgcaattgatggtttaacttct
ttaaattggtccgcaaaaagcaaaactttaaagaacagtggtgcaagcgacgagcttgcca
aatggttcaactggttcgtgataatgcacaaacttaaacactgcaatgaaaggtctacga
gatagcattgctgaatgaagcaacgattaaagcaggtcaaaactacacagatgcaagtcaa
aacacacaaactgactacacagtgagctcactgcagcaaaagcaatcatgtgtcaaaaca
actagtgccatcaatgaatgcgcaagaaatcaatcaagcgaagaccaaagtgcagctaaa
caacagcggttaaacggtcaagaaaacttaagaactgcgcaaaacaaatgcgaagcaacat
tgaacggtcttaagtgaacttaactgacgctcaaaaagatgcagtgaaacgtcaaatcgaa
ggtgcaacgcatgttaatgaagtacacaaagcacaacaaatgctggatgcatataataca
gctatgacgaacttgaaaaaatggttattcaagatcagaatagcattaaagcaaggtgttaac
ttcactgtagtcgacgaagcgaacgtaagtcatatcaaaatgcagtgacgcaagctgaa
caaaattttaaataaagcacaaggtccaaatcttcaaaagacggtgtcgaacactgcgtta
gaaatgtacacgctgtcaaaaacgaattgaacggttaatacaaaatgttgcgaacgctaaag
acaactgcgaaaaatgcattgaataacctaactcaatgaatgacacaaaagaagca
ttgaaatcacaaatgaaggtgcgacaaactgaggtgtaaatcaaggtgtctacaacg
gcatctgaattaaatacagcaatgagcaacttacaacaaatggttattatgatgaagcagct
acaaagcagctcagaataatctgatgcagatagagaaaaacaaactgcatacaatgac
ctgacgaagcagctaaaacggttattagataaaacagctggttcaaatgacaaataaagca
gctgttgaacagcattacacgctgtgaatctgctaaaacagcattaattggtgacgag
cgattaaatgaagcgaagaaacacagctaaacacaaactagcgacaaatgtcacacttaact
gatgctcaaaaagcaacttaacatcgcaaatcgaaagtgtgacgactgttcaggtgtt
caaggtattcaagctaatgcccgtactttagatcaagcaatgaatcaatgaagcaaaagt
attgcttctaaagatgcgactaaatcaagcgaagattatcaagcgcgaatgcagatttca
caaaatgcatacaatgatgcggttaactaattgctgaaggtatttattagtgcaacgaataac
cctgaaatgaatcctgtatatacaatcaacaaaagcgaagcgaagtgaaacagtgcaagctc
gattgaaacggtgatgaaaaatagcagcagcaaaaacaaactgcgaatcagatactggt
cggttgacagcttgaaacaaatgcacaaacgactgcggaatgctgaagtggtatcaagca
ccaaactctgacgctgtcacagcggtcaaaaataaagcaacatcgttaatacagcgatg
ggttaattgaaacatgcacttgctgaaaggtataacgaaacgtagtgtcaattacaca
ctgagcggtacaaacaaacaaacagcgtatgatactgcggttacacaagcagaagcaat
actaatgcttaattggcagcaacgcgaatgaaacacaaagtcaagcagcactaaacaaatg
aatcaagctaaaaatgacttgaatggtgataataaagtgtgctcaagcaaaagagtcagcg
aaacgtgcattagcttcatatagtaacttgaataatgcgaatcaactgcagcaactagt
caaatgcaaatgcaacgacagtagcagggtaactgctgcacaaaactgcttaattgaa
ttaaatcagcgaatgggtcaacttcaaaatggtataaatgacacaaacactgttaaacaa
caagtgaactttacagatgctgacaaaggttaagaagatgcttacacaaatgctgttacg
aatgctcaaggtattttagataaagcacaaggtcaaaatagcgaagcacaaggtgaa
gctgcatataatcaagttaacgactgctaaagatgctttaaagcgtgacgcaaatgtaaga
caagcaaaatcagatgcgaagcaaaacttaggtacattacacacttaataatgacaaa
aaacaaagttaacatcacaaatcgaaggcgcaacacagctcaacggtgtaaatggtgtt
aaaacgaagcacaagacttagatggtgcaatgcacagattacaatcagctatagcaaat
aaagatcaaaactaaaagcgaagcgaacaaatcacatgcagcagatccaactaagaacacgca
tttgataatgctatcacacaagctgaattcttacttaataaagatcacggtgcgaataaaa
ctgaagcagaagctgttgaaacaaagcaattcaaaagtgttaacgtctactgaaatgcttgaac
ggtgacgcgaacttacaacgcgctaaaactgaagctatacaagctatcgataacttgaca
catttgataacaccacaaaacagcattaaaacaaacagtgaaacgctgcgcaacgtgta
tcaggtgttaactgactgaaaaatagtgctacatcacttaataatgcgaggtgataat
aaacaaagcaattgctgatcatgacacaaatgttagcttagtggttaattacactaacgcgag
ctgataagcaaggtgcttatactgctgcatataatgctgcgaacaaactgttaaatggt
tcgcttaattgctgattacaatgcagcagatgttacagcagcaacacaaactgttataat
gctgaaacaggtttaaacggtgatacaaaacttagcaactgcgaagcaacaaagtaagat
gcattacgtcaaatgacacatttatctgatgcacaaaacaaagtattactggtcaaat
gatagcgcgacaaagtaactggcgttcaaaagtgtgaaagcaacgcgacaaaactctgta
aatgcaatgaatcaacttcgaaatagttatgcgaataaagatgtagttaaagcgaagtcac
catatgttgatgcagatagagataaaacaaaatgcatacaatcacagcagttacaaatgct
gaaatatacttaattgcaacgagtcagcgcgacacttgatccatctgcagtaacacaaagca
gtaatacaagtgagcactaaacaaactgcgcttaattggtgcacaaaacttagcgaataaaa
aagcaagaacagcagctgtaacatcaacaaatgaagtcaatttaataatgctcaaaagcaa
gatttaataacgcaagtgacaaatgcacaaatattagcacagtaaatcaagtgaacaaact
aaagctgaacaaattagatcaagcaatggaacgtttaaataacaggaatccaagcaaaagat
caagtgaacacaaagtgttaactttacagatgcagatccagaaaaacaaacagcatacaac
aatgcggttaactgctgtaaaatattattatcaagcaaatggtacaaatgcgaaccaa
tcacaagttgaagcagcactttcaactgtaacaaactacgaacaaagcgttgaaatggtgat
agaaaagttaacagatgctaaaaacaaatgcacaaacaaacttatctacgttagataactta
aacaatgcacaaaaggtgctgttactggaaacatcaatcaagcgcacactgttagtgaa
gtaacgcgaagcattcaaaacgctcaggaactgaatcacagcagtggttaacttgaacaaat
agcttgaatgataaagacactacacttggcagtcacaaactttgcagatgcagatccagag
aagaaaaatgcatacaatgaagcgttcaataatgctgaaaaatattttaaataaattacac
ggtacgaacgctgctaaagatcaagttgaagcagctatgaatcaagtgaatgctacaaaa
gcagcgcttaattggtactcaaaaccttgaaaaagctaaacacacgcaaatcacgaatt
gacggtttaaagcattttaacaaatgcacaaaagagcattaaaacaaatggttacaacaa
tcgactactgttgcaagcacaaggttaattgagcaaaaagcaacaaatgttgatgcagca
atggacaaatcacgtcaaaagtattgcagataatgcgacacacaaacaaacaaatattat
actgatgcaagtgcagataaaaaggtgcgtacaaatgctgttcacaaactgcacaaaggt
atttattgatacaactacaagtcacacttttagatccgactgttatcaatcaagctgctgga
caagtgaacacaaactaaaatgcattaaatggttaattgaaacacttagaggcagcgaacaa
caagcgtcacaaatcattaggttcatagataacttaataatgcgcaaaaacaaacagtt
actgatacaaatgaagcgcgcatcactgttgatgaagcaaatcaaatgaagcaaaatgcg
caaaacttaatacagcagtggttaacttgaacaaagcagtagctgacaaagatgctacg
aaagcgcagcttcaacttcaactgacgagatcaagcaaaaacaaacagcatataacactgct
gttacaatgctgaaaaatcatttcaaaagcgaatggcggcgaatgcacacaaagctgaa
gttgaacaaagcaatcaaaacaggttaattgctgcacaaacagcattaaatggttaattgccaac
gttcaacatgcaaaagcgaagcaacagcatttaattatagctcattatgaccttaaccaa
gcacaaaaagcagcattaaaacacaaagttaaaatgcaactactgttagctggtgtaaac
aatgttaaacacaaagcacaagagttaaacaaatgctatgacacaaataaaacaaagcatt
gcagataaagaacaaacaaagctgatggttaactttgtcaatgcagatcctgataagcaa
aatgcataatactcaagcagtagcgaagctgaagcatttaattagtgctacgctgattgtt
gtcgttacacctagcgaatctactgcagcgttaataaaggttacgcaagctaaaaatgat

tttaattggtaatacacaacttagcaacggcgaaacaaatgttcaacatgctattgatcaa
ttgccaaacttaaaccaagcgcaacgtgatgaatacagcaaacacacgcaagcaaca
cttgtaacaaacgtcaatgctattcaacaagcgcgcaacgcttaatgacgcatgaca
caattgaaacaaggtattgcaataaagcacaattaaaggtagcgagaactatcacgat
gctgatactgacaagcaaacagcatatgataatgacagtaacaaagcagaagaattgtta
aaacaaacaaacaaatccaacaatggatccaatacacaattcaacaagcattaaactaaagt
aatgacacaaatcaagcacttaacggtaatacaaaaattagctgtagcacaacaagatgct
aagacaacacttggtagacttagatcatttaaatgtagctcaaaaacagcgctaaacact
caagttgaacaagcaccagatattgcaacaggttaataatgttaagcaaaatgctcaaaat
ctgaataatgctatgactaacttaaaccaatgcatatacaagataaaactgagacattaaat
agcattaaactttactgtagcagatcaagctaagaaagatgcttataactaatgcggtttca
catgcaagaggtattttatcctaagcaaatggcagcaatgcaagtcacaaactgaagtgga
caagcgatgcaacgtgtgaacgaagcgaacaaagcattgaatggtaatgacaatgtacaa
cgtgcaaaagatgcaagcgaacaaagtgattacaatgcaaatgatttaactcaagcgcaa
aaagatgcatataaaccaagtcgtagctgcaacaaactgttgcaaatgtaaacagatt
aagcaaacagcacaagatttaaatcaagcaatgacacaattgaaacaaggtattgcatat
aaagcaaaaactaaagcaaatggtaactttgtcaatgctgatactgataagcaaaatgct
tacaacaatcggttagcagatgctgaacaaataattagtggtacacaaatgcaaacgtg
gatccacaacaagtggtcaagcggtacaacaagtgatcaagtcgaaggtgatttaaac
ggtaaccataacttacaagttgctaaagcaatgcaatacagccattgacagttacca
aacttaatacaccacaaaaacagcattaaaagcacaagtgctgcatgcaagacttggt
acaggtgttaatgctattaaagcaaaatgctgtagcttaataatgcaatgggtacattg
aaacaaacaaatccaagcgaacagtcagtagcagcagtcagttgactttacacaagcggt
caagcaaaaacaaacagcatataacaatcggttaacaaagcgaacaaatcgcaaatggc
ataccaacacctgtattgacgctgatacagtaacacaagcagtgacaactatgaatcaa
gcgaagagatgcatataacgggtgatgaaaaatagcacaagcgaacaaagagctttagca
aatcttgatacgttagcggttttaatacaccacaacgctgtagcattacgttaacaaatc
aatcaagcacaagcgttagctacagttgaacaaacttaacaaatgcaacaaatgtgaat
acagcaaatgagtaacttgaaacaaggtattgcaacaaagatactgtaagcaagtcaggtg
aactatcatgtagctgtagcagataagcaaacagcagcatatacaaatgagtgctcgaagc
gaaggtattatcaatcaacagcaaaatccaacgcttaaccagatgaataaacagtgca
ttaactcaagtgactgtagctaaaaatggcttaaacgggtgaagtaaatggcgaactgaa
aagcaaaatgctaaagatgctgaagtggtgtagcagcatttaaacagtgctcaaaaacaa
gcattaaaaggtcaaatcgatcaatcgctgaatgctacagtgaaacaaatgaacaa
acagcaaacagcagcttagatcaagcaatggatcaattatcacaagcatttaagtataagct
caaacattagcgagcggttaattacttaaatgtagatcctgacaacaaatgctataaa
cagcgagtagcaaaagctgaagcatttgaataaacaagtggtactaatgaagtacaa
gcacaagtgatcaatcaatgaagtgaacgagcgaacaaagcatttaattggttaat
gacaatttggcaaatgcaaaaacaaagcaaaaacaaatggcggaacttaacacactta
aatgtagcacaacaaacaaatcttgaaggtcaaattacacaagcgccacttggtacagat
gtcactacgatttaacaaaagcacaacggttagatcatgcatggaatttataagaaat
agtgttggcgaataatcaaacgacattagcgtctgaagattatcatgtagcaactgcaac
agcaaaaatgactataacaaagcgtgaacagctgctataatatacattataacactaca
tcgctacgattgaatccagatgtagttaaagggtgcaacgacacaagtgaaataatcgaaa
gttgcattagatgggtgtagaaaacttgtagcagcgaacaaacagcaaacacagactt
gatcaattagatcatttgaataatgcaaaaagcaacagttacaatcacaattagcgaa
tcactgtagatattgctgagtttaagggtcacaacaaacagcagaatctttaaactgctg
atgggttaacttaattatgagattgtagatcatcaacggttgcaacaaagtggttaacttc
atcaatgctgtagatgataaacaactgcttataatcagcggttaagtgaagcagcagca
atgattacaacaaacaaactggtcaaaatgcaacaaacagaagtagaacaagcttact
aaagttcaaacacacttcaagcggttaaatggagaccataatttacaagttgctaaaaa
aatgtagcagcgaagcaatgtagcttcaacagcttaaatgatcctcaaaaacagcattta
aaagcaaatgtagcgtgcaactttagtaactgaggttcatcaaatgcaacaaatgca
aatagcgttcaacaaagcaatgtaggttgaagcagagcattcaagtaacgcagcaact
aaagcaaatgcaaatatatacaacgaagatcaacagagcacaacaaactatgtagcaag
gttcaagcgcaaatataatataatcaatgaacaaactgcaacatttagataatgaggt
aatcaagcagcgaacactgtgaatacaacgaagcagcattacatggtgtagtgagttta
caaaatgataaagatcatgctgaagcaacggttagtcaattagcacaacttaaacaaatgca
caaaaacatataagagatagcttaattgtagtggaacaaactagaacagcagtttaagcaa
gattttagtggaagcacaagcatttagatcaacttatggatgcatatacaacaaagtttgc
gacaagatgcaacagcgtgagcagcagtcattgtaatgcaagcagaaataaaaacaa
tcctatgtagaagcagttcaaaatgctgagcttatcattgtaggatttaataatcaact
atcaataaaggttaattgtagcagcagcagcagcagcagcagcagcagcagcagcagc
gatgggttgaagcagtagctcaagataaagcaaacgctgggaattctctaaatcattta
gatcaattaacacagcgtcaacaaacagcgttagaatacaaatcaaatataatgcaacaa
cgtggcgaagtagcacaacaaatcaactgaagcacaagcagcagcagcagcagcagcagc
ttacgtaataagcattcaagatcaacagcaaacggaagcggttagcaagtttatcaatgaa
gataaacacacaaagatgcttacaacgagcaggttcaaaatgcaaaagatttaataat
caacttaacaatccaacgcttgataaagcacaagttgaacaaatgacacaagcgttaac
caagctaaagataacctacacggtgatcaaaaacttgagagcagataaacacacatcggtt
actgatttaataatcaataatgggttgaataatccgcaacgctcaagcagcagcagcagc
ataaacacagcagcaactcggtggcgaagtagcacaacaaattagctgaagcaaacgctt
gatcaagcaatgcaagcattacgtaatagtattcaagatcaacaaacagaaatcgtgt
agcaagtttatcaatgaagataaacggcaaaaagatgcttacaagcagcaggttcaaaat
gcaaaagatttaattcaacaaacaggttaatacactcgcaaatcaacagtagaaca
ttgacacaagcagtaacaactgcaaaagataatctacatggtgtagcaaaaacttgctcgt
gatcaacaacagcagtaacaactgtaaatgcatgcaaaccttaaatctatgcaacaacaa
caagcatttaactgtagctataaatgtagcgcttacaagaacagaggttgcaacacatgtt
caactgcttagaacttgatcagcgatggaacattgaaaaataaagttgtagcaagtg
aatacagatgaaggtcacaacaaatcaactgaagcgtcaactgataaaaagagcagta
gatcaagcgttacaagcgtgcaagaagcattacagatccaactaatggttcaaatgcaat
aaagacgctgtagaccaagatttaactaagcttcaagaaaaagaaatgagtttaattggt
aatgagagagtcgtgaagcttaaacacaaagcgaacaaactattgaccaatcaacacat
ttaaactgctgatacaattgcaactgtaaacacaaacttagtcaagcagcaaaccttcaa
cgaatgctgaatttagtagcaagcaacgcaattgaatcaatctatggatcaattacaa
aagcagtttaataagcagcgttaacgttagcaaaccttagattacacacaagcagattca
gataacacaaatgcttataaacagcatttgctgtagctgaaaaatgattgaaacaaat
gcgaataagcaacaagtgtagcagcagcagcagcagcagcagcagcagcagcagcagc
aatgggtgtaggaagcgttagcagcagcagcagcagcagcagcagcagcagcagcagc
aatgcattaacaatgctcaacaagatggatttaaaaggtcgatcgatcaatcaacagat
tcaaatcaaatccaacaaatgtagatgaggttaagcagcagcagcagcagcagcagcagc
ttgtcacaagaatcagcagcagcagcagcagcagcagcagcagcagcagcagcagcagc
gcagatacacaagcagcagcagcagcagcagcagcagcagcagcagcagcagcagcagc

gataaatcgactgggtcaaaacttaactgcaaaacaagttatcaaatataatgatgcagtc
actgcagctaaagaaagcattaaatgggtgaagaagacttaataatcgtaaagctgaagca
ttacaagatttgatcaattaacacatcttaacaatgctcaaaagacaattagcaatccaa
caaatataatgctgaacgctaaataaagcatctcgagcaatataagagcaactaaa
ttagataaatgcaatgggtgcagtaacaatatattgcagcaacagcacttgggtgtatc
agcagcacaattacatcaatgcagatgacaatttgaagcaaatatgataatgcaatt
gcgaatgcagcacatgagttagataaagtgaaggtaatgcaattgcaaaagctgaagca
gagcaattgaaacaaaattatcgatgctcaaaatgcatataatggagaccaaaacctt
gcaaatgccaagataaagcaaatgcgtttgttaattcgtaaatggattaaatcaacag
caacaagatcttgacataaagcaattaaatgcccgaactgtatcagatgtaacagat
attgttaataatacaaatgacttaaatgatgcaatggaaacattgaaacatttagttgac
aatgaaattccaaatgcagagcaaaactgtcaattacaaaacgctgacgataatgctaaa
acaaacttcgatgagccaaacgtctagcaaatatattgctaaatagtgataacacaaat
gtgaatgataatcaatggcgcaatccaagcagtcgaatgcaatccataatcttaattgg
gatcaacgactacaagatgctaaagacaaggcaattcaatctatataacagctttagct
aataaagctaaaagaatcgaaagcttcaaatgacgagatcaagacaagcttattgcgaaa
aataaagcagaagaattggcacaacagcatcatcaacaacattataaagcaacaagta
caggctgtatctcaagttcaaacagcaggcaaccacgcatgtaacaagctgccaat
gaaataccaaaagcaaaatgtatgccaataaagacgttgataagcaagctcaagcatta
attgacgaaattgatcgaaatccaaatcacaagataaggaacaaacagcacttaagat
cgtatttaatacaatcttcaacaaggtcataacggcattacaatgcatgactaaagaa
gaaatgaaacaaagccaaagcacaacttgccgaagcattacaagacatcaagatttagtg
aaagctaaagaagatgcaaaacaagatgttgataaacaagttcaagctttaaattgacgaa
atcgatcaaaatccaaatctaacagataaggaaaaacaagcacttaagatcgatataat
caaatcttcaacaaggtcatarcgacattamcaatgcatgacaaaagaagcaattgaa
caagcaaaagaacgttttagcgcaagcattgcaagacatcaagatttagtgaaagctaaa
gaagatgcaaaaatgatattgataaacgtgtacaagctttaaattgacgaaatcgatcaa
aatccaaatctaacagataaggaaaaacaagcacttaagatcgaaatatacaaatctt
caacaaggtcataacgacattacaatgcgctgactaaagaagaatttagcagggcaaaa
gcacaacttgcaacagcattgcaagacatcaagatttagtgaaagctaaagaagatgag
aaaaatgcaataaaagccttagctaatgcaagcgtgatcaaatcaattcaaatccagat
ttaacacctgagcaaaagcaaaagcgtcaaaagaattgacgaagctgaaaaacgagca
ctcaaaaacgttgagattgctcaaatatagatcaattaaatcgaggattaaacttaggt
tagatgacattagaataacacatgtatgggaggttgatgaacaacctgctgtaaatgaa
atttttgaagcaacacctgagcaaatcctagttaattgggtgaaactcattgtacatcgat
gacatcattacagaacaagatattcttgacacataaacttaattgatcagctttcagca
gaagtcactgacacacatacaactgcaacgattttctgatagcttaacagcaaaagttgaa
gttacattgcttgatggatcaaaagtgtattgtaattgctcgttaaaagttgtgaaaaa
gaattgtcagtagtcaaaacaacaggcaattgaaatcaatcgaaatgaggcacaacaaaag
atfaatgaaatcaataatagtgtgacattaaactggaacaaaaagaagctgcaattgca
gaagttaataagcttaacaacaacgaattgatcatgttaacaatgcacgtgatgttcat
tcagttgaagaattcaacaacaagaacaagcgcatattgaacaatttaattccagaacaa
ttacagattgaacaagcaaaatcaaatgcaattaaatcgattgaagatgcaattcaacat
atgattgatgaaatcaaagctcgtactgatctaacagataaaagagaagcaagaagctatt
gctaaagttaaatcaattaaaagaacaagcaattcaagcgattcaacgtgcgcaaaagcatc
gatgaaataagtgagcaatttgaacaatttaaaagctcaaatgaaagcagcttaattcaaca
gcaaaagaactagctaaacgcaagcaagaagctatttagtagaattaaagacttttcaaat
gaaaaataaatagtattcgaaatagtgaatttggcacagctgatgaaaaacaagcagca
atgaaatcaaatcaacgaaatttgcttgaaacaattagagatattataatgcgcataca
ttacagcaagttgaggtgcattgaacaattggtatttgctcgaaatttcagcagtaacaaat
gtaacatctgactgctaaacaatcgtaagctactggaatgaaatcgaatagccattta
acaattggttatggaaactgcaaatcatccatttaacagttcgactattggacataaaaag
aaacttgatgaagatgatgacattgatccacttcatatgcgtcacttttagtaataatttc
ggtaatggtatttaaaaacgctattgggtggtggtggtatctctggtttactagctagtttc
tggttcttcattgccaacgctcgtcgttaaagaagatgaagaggaagaattagaataaaga
gataataataaagattcaataaaagagacttttagacgatacaaaaacattaccactttta
tttgcaaaacgtcgcaaaaagaagatgaagaagatgttactggtgaagaaaaagattcg
ctaaataatggcgagtcactcgataaagtttaacatagccggttcttcttaccaaaacgt
cgctgaagaagatgaagaagatgtggaagttacaattgaaacacagatgaaaaagtg
ttgaagataacgaacattcaccactcttattcgcaaaacgacgcaagataaagaggaa
gatgttgaacaacaactagatttgaatcctaagatgaggacgttcttattattggct
aaaaagaaaaatcaaaagataaccaatccaagacaaaaagtcagcatcaaaaaatct
cttaaaaggtagcagctaaaagaagaaaaagaagctaaagaaaaataaaaaataa

440. vnyrdkiqkfsirkytvgftstviatlvlfigntsqahaaetnqpasvvkqkqssnneqt
 enresvqnsqnsqngqslsatheneqpnisqanlvdqkvaqssstndegpasqnvntkk
 dsataattqpdkeqskhkqnesqsankngndnraahvenheanvvtasdsdngnvqhdr
 nelqaffdanyhdyrfidrenadsgrfnyvkgi fdkintlsgndpinnkdqlaykele
 qavalirtmpqrqgtsrrsnriqtrsvesraaeprsvdyqmanssyvvenandgsgypv
 gtyinasskgapynlpttpwntlkasdskeialmtakqtdggyqvwikfnkghaphqnm
 fwfalpadqvpvgrtdfvtvnsdgtvqwsghagagankplqgmweygvndphrshdfki
 rnrsgvviydwptvhiysledlrsadyfseagatpatkafgqmfeyingqkpaespgv
 pkvytfigqgdasytisfktqgtpvtnklyyaaggraleynqlfmysqlyvestqdhqgrl
 nglrqvvnrtyrigttkrvevsqgnvgtkkvlestnlnddfvddplsyvktpsnkvlgf
 ysnantnafrpggagqlneyqlsq lftdqklqeaartrnpirmligfdypdaygnsetl
 vpmnlvlpelqhnkfkknddtqniaekpfskqaghpvfvyvayngqnasvnlggsvts
 iqplrintlsnenftdkdwqitgiprtlihenstnprnnarenielvgnlpgdyfgti
 rfrgkeqlfeirvkphtptittaeqlrgtalqkvpmnsgipldpsalvylvaptngtt
 nggseadqipsgytilatgtpdgvhntitirpqdyvfvippvgkqiravvyknvvasnm
 snavtilpddipptinnpvginakyrrgdevnftmgvsdrhsigknttittlpgwtsnl
 tkadknngslsitgrvsmnqafnsditfkvsatdnvnttndsqskhsvihvgkisedah
 pivlgnstekvvvnptavsndekqsitaafmnknqnrigylastdpvtvndngnvtlhyr
 dgssttldatnvmtyepvvkpeyqtvnaaktatvtiakqgsfsigdikqyftlsgqppip
 sgtfntitsdrtpaqevsqmnaqtqlyhitatnayhkdsedfyislkiidvqpegdgr
 rvyrtstydlttdeiskvkqafinanrdviltlaegdisvntpnnganvstittvinkgrl
 tksfasnlanmflrwmfpqdytvtwtanlianrptdgglswsddhksliyrtdatlg
 qittndiltmlkattpvgprnnitgneksgaeaggrprfrttgysqsnattddqgrqftl
 ngqvigvldilnpsngyggqpvtnsntranhnsstvvvnepaangagafidhvvksns
 thnasdavykaqllytpygpkyvehlngntgnnttdainiyfvpsdlvnpntisvgnynh
 qvffsetfntitandnfgvqsvtpvntsqitgtvndnnhghvsatapnvtatnktinll
 adtsgntatstfnvtvklrdrkyrvgtssaanpvrianisnnavsgadgttiinslt
 fctetvnrsvarasaneitsktvsnvstgmnnavtvtvtyqdggtstvtvpkhvpei
 vahshytvggqdpagnngssasdyfklsgsdiadatitwvsggapnkdntrigeditvt
 ahilidgettpitkatykvvrtvtpkhvftargvlypgvssmvdakqyvkpvnswnstn
 aghnmfgfvgtygpnkdvvigistrilrvtydnrqteditlskvkdpdpnidansvtyka
 gltngeikvnmvnmssvklfkadntplnvntnithsgfssvvtvsdaldpnlgakssi
 smunvtyttqdehgqvvtvrnesvdsndsattvtpqigattegavfikggdgdffghv
 erfignppghatvawhdspdtwknvtgnthktavvtlpgngqtrnvevpvkvyvpanaka
 psrdvkgqnltngtdamnyiitfdpntntngitaaawanrgqpnngqagvqhlndvtyppi
 saakrvpvtvnyvqfepqgttyttvggtlasgtqasgyahmqnatgiptdgftykwnrd
 ttgntdanwsamknkvakvvnakydvlynghtfatslpakfvvkdvgpaktvtetaag
 aitiapganqtvnthagnvttayadklvlkrngnvvtftfrnntspwvkeasaatvagia
 gtngnltvaagtfnpeditqvvatqgsgsetvsdeqrsddftvvpqngqattkiwngghi
 ditpnpsghlinptqamdiaytekvngaehtsktinnvrgqnnqwtiankpdvyltdaq
 tgvktfnantikpnssititpkagtghsvssnpsltitapaahvntteivkdygsnvtaa
 einnavqvanvkratitkngtampntnlaggstttipvtvtyndgsteevqesiftkadkre
 litaknlddpvstegkpgtittqynnammnaqqqintakteagqvinneratpqqvsda
 ltkvraaqtkidqakallqknedsqvltsknnlqssvnpvpsatagmtqssidynakkr
 eaeteitaaqrvidngdataaqgsidckhrvndalnalngakhdltadthalqavqqlnr
 tggttgkqpasitaynnisiralqsdltaknsanaigkpirvtvgevsaltvnrvrner
 ltqainqlvpladnsalktaktkldeeksvtttgmtqssiqayenakragqtestnaq
 nvinnngdtdqgiaaektkveekynslkqaiagltplaplqtaktqlqndidqptsttg
 mtsasiaaefneklisaartkiqeidrvlshpdatirgnvtaanaaksaldqamglitvd
 kaplenaknqlqysidqtsttgmtdqdsinaynakltaarnkqginqvlagspvteqin
 tntstanaqksdlidhargaltppdkapltaktqlqesinqptdtgmtdaslnaynqlkq
 aargklteingvlnngntvqgnidkvteangakdqlntarggltldrgpalttlhgasnl
 nqaqgnnftqgqinaaagnhaaletiksnitaltamtiklksvadtntiksdqnytdatpa
 nkqaydnavaakgvigettntmdvntvngkaasvsktdaldqgqnlqrakteatnai
 thasidnagqknaltqgynsaqnvqavndikqttqslntamtglkrvnanhngvqgsdny
 vnadtnkknndynnayhandlingnaqhpvi tpsdvnnalsnvtскеhalngeaklnaak
 qeantalglnlnlnnaqrnlqsgingahqidavntikgnatnlmsamgnlrqavadkdkq
 vkrteyadadaktqnaysavssaetiingttntpsvddvnratsavtsnknalngye
 klagsktdaaraidalplhnnagkadvkskinaasniagvntvkqggtldlntamgnlga
 indegttlnsgnyqdatpskktaytnavqaakdi lnsngqknktkdqvtteamnqvnsakn
 nldgtrlldqakqtakqqlnmmthlttaqktnltnginsgttvagvqtvqsnantldgam
 ntlrgsiankdatkasedyvdanddkqtaynnavaaaetlinansnpemmpstltqkaeq
 vnssktalngdenlaaakqnaktylntltsttdaqknnlslqtsatrvsgvdtvkqnaq
 hldgamaslqnginnesqvskskyrdadntnkqgeydnaitaakailnktgpnatqnav
 eaalgrvnnakdalngdakliaaqnaakqhlgtlthittagrnldntngisqatnlagves
 vkqansldgamnqltandksgtlasqnlfdadeqkrnaynqavsaaetlntkqtpn
 taktaveqalnnvnnakhalngtqnlannakqaaitaingasdlngkqkdalkaqaqqr
 vsnaqdvqhnateintamgtlkhaiadkntntlasskyvnadstkqnayttkvtnaeiis
 gtptvvtvtpsevtaaanqvnsakqelngderlreakqmantaidaltqlntpqaklkq
 vgganrledvgtvgtngqalnnamkglrdsianettvktsgnytdaspnnqstynsavsn
 akgiingtnnptmdtsaitqattqvmnknnglnaenlrnaqntakqnlntlshtltnnk
 saissqidraghysevtatknaatelntqmgnlqegaihgdntvkgsvkftdadkkrday
 tnavsraeilnktggantskqdvaaaiqnvssaknalngdqnvtanaknaaknalnlt
 innagkrldlttkidgattvagveavsnststqlntamanlqngindkntlasenyhdads
 dkktaaytqavtaenilnksngnlkdktavenalsqvanakgalngnhleqaksnantt
 inglghlttaqkdklkqvgqagqnvagvdtvkssantlmgamgtlmsigdnatknqgn
 yldaternktynnavdsangvinatsnpnmndanaingiatqvtstknaldthnlqak
 qtatnaidgatnlknagkdalkagvtsagrvanvtsiqgtanelntamgqlqhgiddena
 tkqtqkyrdaeqskktaydqavaaakailnktgsgnsdkaavdrallqvtstkdalngda
 klaeakaaakqnlgtlnhi tnaqrtdllegqnnqattvvgvntvktnantldgamslqgs
 indkdatlrmqnyldadeskrnaytqavtaaeigilnktggntskadvdnalnavtraka
 alngadnlmaktstntidglpnl tqlqkdnlkqveqagvavagvgnvkdkgntlntam
 galrtsigndnttktsgnyldasdsnknnnytavnnangvinatnnpnmndanaingmanq
 vnttkaalngaqnlagaktntatinnahdlngkqkdalktqvnnaqrvsdannaqhtat
 elnsamtalakaaidkertkasgnyvnadqekrqaydskvtnaeniisgtpnatitvndv
 nsaasqvnaaktalngdnrlrvakehanntidglalnnagkaklkqevqsattldgvqt
 vknsqtlntamkglrdsianeatikagqnytdaspnnrneydsavtaakailinqtsnpt
 mepntitqvtsgvttkeqalngarnlaqakttaknnlntsinnaqkdaltrsidgatt
 vagvntgaktakelnamhsilngindetqktqkyldaepsksaydgavnaakailt
 kasggnvdaaveqalqmvnstktalngdaklneakaaakqtlgtlthinnaqrtaidne
 itqatnvgevmvkvakagqldgamgqletsirdkdtlqsgnyqdadaktaysgavna
 aatiinktaggntpkadveramqavtqantalngiqlndrakqaantaitnasdlntkqk
 ealkaqvtsagrsvsaangvehtatelntamtalkraiadkaekkasgnyvnadankrqay

dekvtaaenivsgtptptltpadvtnaatqvttnaktqlnghnllevaknqantaidglts
 lngppkaklleqvqgattltpnvqtrvrdnaqlntamkglrdsianeatikagqnytdasq
 nkqtdynsavaaakaiigqttspmsnaqeingakdqvtakqqaalnggenlrtaqtnakqh
 lnglsdltdaqkdavkrqiegathvnevtqagnnadalntamtnlknigiqdntikqgvn
 ftdadeakrnatytnavtgaqeilnkagqpnstskdgvetalenvgraknelngnqnvana
 ttaknalnnltsinnaqkealksqiegattvagvngvsttaselntamsnlqngindeaa
 tkaaqkytdadrektayndavtaaktllldktagsndnkaaveqalqrvntaktalngde
 rlineakntakqgvatmshltdaqkanltsqiesgttvagvqgiganagtlldqamnlrqs
 iaskdatkssedyqdanadlqmayndavtnaegiiisatnnpemnpdtinqkasqvsaks
 alngdeklaaakgtaksdigrltdlnnaqrtaanaevdqpnlavtaaknkatslntam
 gnllkhalaeakdntkrsvnytdadgpkqaydtavtgaaitnangsnanetqvgaalnql
 nqakndlngdnkvaqakesakralasysnlinaqstaatsqidnattvagvtaaqntane
 lntamqqlqngindqntvkgqvnftdadgqkdaytnavtnagglldkahgqnmkkaqve
 aalngvttaknalngdanvrqaksdakanlgtlthlnnaqkdltsgiegattvngvngv
 ktkaqeldgamqrlqsaiandqtkasenyidaptkktafdnaitgaesylndkdhgank
 dltqvttnapnistvngvktkaegldqamerlingiqdkdqvkqsvnftdadpekqtayn
 navtaeeniingangtnangsqveaalstvttkqalngdrkvtakannanqtlstlndln
 nnaqkqvavtgninqahtvaevtqaiqtageintamgnlkslnkdktlgsqnfadadpe
 kknayneavnaenilnksstgtnvnpkdqveaamngvnatkaalngtgnlekakqhantai
 dglshtnaqkealkqlvqgqsttvaeagqneqkannvdaamdklrqsiaadnattkqngny
 tdasqnnkdaynnavttaqgiiddgtstpldptvinaagqvsttknalngnenleaaq
 qasqslgsldlnnaqkqvtvtdingahavdeanqikmaqnintamgnlkqaiadkdat
 katvntftdadqakqayntavtnaeniiiskangnatqaevegaikqvnnaakqalngnan
 vqhakdeatallnsndlnqakdalkqgvqmatvavgnvngktaqelnamtklkggi
 adkeqtkadgnfavnadpdkmaynqavakaealisatpdivvtpseitaalnkvtqaknd
 lngntnlataknvqhaidqplnlnqagrdeyskqitqatlvpvnaiqqaattlndamt
 qikqgllankaqikgsenyhdadtktayndavtkaeelkqtnptmndpntiqqaltkv
 ndntqalngnqkladagkdaktlgtlthlnnaqkqalttqveqapdiatvnnvknaq
 lnnamtnlnnaalqdktetlinsinfddadqakdaytnavshaegilskangsnasqteve
 qamgrvneakqalngndnvrakdaakqvi tnanlndnqakdalkqgvdaaqtvanvnti
 kqtagdlnqamtqikqgiadkdqtkangfnvadttdkqaynnavahaeqiisgtpnanv
 dpqvgvaqalqgvnqakgdlngnlnlqvakdnantaidqplnlnqpgktalkdqvshaelv
 tgvnaiknadalnnaamtqikqgiqansqvpqsvdftqadqdkqaynnanqagqiang
 iptpvtltpdvtvqavttmngakdalngdeklaqakqeaalndltlrdngqqrdralnqi
 nqagalatveqtkqnaqnvmtamsnlkggiandktvksenyhdadadkgtaytnavsq
 eglngqtnptlndpdeitraltqvtdaknglgeaklatekqnakdavsgmthlnndaqkq
 alkngidqspciatvngvktatsldqamdqlsqaindkaqtladgnylnadpdkmayk
 qavakaeallnksgstnevqagvesitnevnaakqalngndlnanakqakqqlanlthl
 ndaqkqsfesqitqeplytdvttinqkaqtlldhamellrnsvadnqgttlasedyhdtaq
 rmdngynqavtaanniiingttstpmnpddvngattqvnntkvaldgdennlaakqgannrl
 dqlldlnnaqkqqlqsgitqssediaavngghktaeslntamgnlinaiadhqaveqrgnf
 lnadttdkqtayntavneaaamlnkqgtqgnangteveqaitkvgttlqalngdhnlgvakt
 natqaidaltslnndpqtalkdqvtaatlvtavhqi eqnantlnqamhgrqsiqdnaat
 kanskyindeqpeqnydqavqaamniineqtatldnnaingaatvnttkaalhgdvkl
 qndkdhakqvtvslahlnnaqkmedtlidsettrtavkqdlteaqaldqldalqgsia
 dkdatrassaynaepnkqsydeavqmaesilaginptinkgnvssatqavisskna
 dqverlaqdkqtagnslnhldqtpaqqaalenginnatrgvavqlteaqalngamea
 lrsniqdgqqtagskfinedkpgkdayqaavqnakdlnqtnptlkdqaveqltgavn
 qakndlnhgdqkladckqhavtdlnqnglndpqrqalesginnatrgvavqlaeakal
 dqamqalrnsiqdqqqtessgfinedkpgkdayqaavqnakdlnqtnptlkdqaveql
 ltqavttakdnlhgdqklardqggqavttvnaipnlinaqqaaltdainaaptrtevaqhv
 qtatelldhametlknkvdqvntdkagpnyteastdkkeavdqalqaesitdptngsnan
 kdavdgvltklgekenelngnervaeaktqakqtidqtlthlnadqiatatqndqatklq
 piaelvdqatqlngsmqdlqgavnehanveqtvdytqadsdkqaykqaiadaenvlkqn
 ankqvgdqlqnlinaqalngdervalaktngkhdidqlnalnaqgqdfkgridsnd
 lngiqivdeakalnramdqlsgeitdnegrtkgstnyvnaadtqvkqvydetvdkakqal
 dkstgqnlitakqvikiandavtaakalngeerlnnrkaealqrlldqtlthlnnaqrqla
 qinnaetlnkasrainratklndamgavqgyideqhlvgisstnyinaddnlkanydnai
 anaaheldkvqgnaiakaeaeqlkqniidagnalngdqlanakkkanafvnslnglnqg
 qgdlaahkainnadvtvsvtdivmngidlndametlkhldvneipnaeqtvnygnadnak
 tnfdakrlantllnsdntnvnndingaiqavndaihnlngdqlrdakdkaiqsingala
 nklkeasnatdqdkiaknkaealangsiinninkatsnqavsgvtaghnaieqvhan
 eipkakidandkvdkqvqalideidrnpltdkekqalkdringilqgghnginnamtk
 eieqakaqlaqalqdkldlvkakedakqdvdkqvqalideidqnpnltdkekqalkdrin
 qilqgghxdixnamtkaieqakerlaqalqdkldlvkakedakndidkrvqalideidq
 npnltdkekqalkdringilqgghndinnaltkeeeieqakaqlaqalqdkldlvkakeda
 knaikalanakrdqinspdltpaqkalkkeideaskralgnvnaqtdqlnrglnlg
 lddirnthwvdeqpvneifeatpegilvngelivhrddiitegdilahnliidqlsa
 evidtpstatisdsitakvevtilldgskvivnvpvkvekelsvvkkqaiiesienaaqk
 ineinnsvtltleqkaeiaevnmlkqgaiahvnnapdvhsveeiqqgeqahieqfnpeq
 fcieqaksnaiksiedaiqhmidelkardltdkekqeaialnqlkeqalqaiqraisi
 deiseqleqfkaqkaanptakelakrkqeaiksriksfnekinsirnsiegtadekqaa
 mnqineivletirdinnahtlqqveaalnngiarisavqivtsdrakqssstgnesnshl
 tgyygtanhpfnsstighkklldedddidplhmrfhsnnfgnviknaigvgvisgllasf
 wffiaakrrrkedeeeeeirannksiketliddtkhlpllfakrrrkedeedvtveekds
 lngesldkvkhtpfflpkrrrkedeedvevtnentdekvldknehspllfakrrrkdkee
 dvetttsieskedevplllakknqkdnqskdkksaskntsckvaakkkkkkakkknk

441.	<p>atgttcttttgatgatgctaaagaagcatcaagagtacttgaataacattgacgaaaaga gatgctaaaaaagaaaatcctattccgatgtgtggcggtaccatatcattctgctgataat tacattgaaacattgattaataaggggtataaggctcgctatatgtgaacaaaatggaagat ccaaagcaaacaaaaggaatgggtagaagagagagttgtgaagaatcatcacaccaggaact gttatggatcaaaaatgggtatggatgaaaagaaaataattatatatttaagtttatcgaa aatgaagaatttggattatgctattgtgtatgtttctacaggagaactcaagtaactcat ttcaaaagatcacagcaaccttgccttaatgagattacaacaattaatcccaatgaaatcgct ataaaagcaagctctatctgaagaattaaaaagacaaatcaacatgataactgagacgatt actgttctcggaagatatatctgatgaagattatgatgatgaatcagttgacacatcagttta atgcatgacacaaactcaattattgttagattacattccacacacaaaagcgagattta tctcatattgaggaagtaattgaatatgctgcagttgatttatgaagatggatttat gcgaagcgaaatttagagctgacagagagcatacgattaaaatcaaaaaagggaacttg ttatgggttaatggatgagacaaaaacacggtgggtgctagacggttaaaagcagtggtatt gatcgctccatttaataaacaacaaatcaacgacagattaaattattgttgagagttt atggaccgttttattgaaagagatcattacgttaactcatttaaatcaagtgatgacata gaacgactagtaggaagagtgagttatgaaacgtaaatgcaagagatttaatacaactt aagcattctatatccgaaatacctcacattaaagcattactcaatgaattgggtgcacaa actaccacgcaatttaagaatttagaacctttgatgacttggtacaaattttagaagaa agtttagtgaagaaccacctatttccatcaagatggaggattattaaaaatggcttc aacgcgcaacttgatgaatattagaagcttcaaaaaatggtaaaacttggtgcagaa ttacaagctaaaggaacgtgaacgtacaggtatttaagtcattgaaaattagttttaataaa gtgtttgggttattttatgaaattacacgtgcaaaacttaataattttcaacctgaagcg tttggctataatcgaaaacaacattatctaatgctgaacgatttattacggatgaatta aaagaaaaagaagataataacttgggtgctgaagataaaagcagtagagttagaattgaa ttatttggtaattacgagaaacacattaaaacgtacactgaacgtttacaaaagcaagcg aaaaatcatttcagaacttgattgtttacaaagtttgcgtgaattgctcaaaaaatataat tatgtcacaacctacatttagtgatgataaagttttacatttagaaaactcaagacatcct gttgttgagagagtgatggattataatgattatgtacctaagtgattgccatcttgatgat gaaacggtttatttattctcattacgggacctaatatgtcaggttaagtcaacatatatgaga caagttgctataataagtatcatggctcaaatgggagcatatgtaccatgtgattcagca acattacctatatttgatcaaattttactaggattgggtgcagcagatgatcttgatca ggtaaaagtacattttatggtagaaatggtagaagctcaaaaagctttaacttatgctact gaaaatagtttaattatctttgacgaaataggaagaggtacatccacttatgatggtcct gcgttagcgcaagcgatgattgaatatgttgcctcaaaacttccatgctaaagacacttttc tcaacacattatcatgaattgacatcacttgatcaaatgcttaagtgtttaaaaaatgta catgttgcgtgcaaacgagtatcaaggtgaactgataattttgcataaagtcgaagatggc gctgtggatgatagctatggtattcaagtgccaaaattagcggatttacctaagagtc attgatagagcgcaagttatattaaatgcatttgagcaaaaaccttcgtatcaactctct catgagaatactgacaatacaacaacggttcgctcgatatacagattttgggtcgaacagaa gaagagcaatcagttatagaacacatacatcaaatcataattatgagcaagcgaccttt gatttatttgatgggtacaatacaacaagtgaggttgatgtcaaatcagagaattgaat ctatcaatatgacaccattggaagccttaatacagctgaatgaattacaagtcattta aag</p>
442.	<p>mfddakeasrvleltlkrdakkenpipmcgvpyhsadnyietlinkgykvaiceqmed pkqtkgmvrrevvriitpgtvmqngmdekknyilsfieneefglcycdvstgelkvth .fkdtatllneittinpneiivikqalseelkrqinmitetityredisdedydmnqlthql mhdttqllldyihhtqkrldshieevieyaavdykmmdyyakrnleltesirlkskkgtl lwlmdektkpmgarrikqwidrplinkqqindrlniveefmdrfierdtlrnhlnqvydi erlvgrvsvygnvnardliqlkhsiseiphikallnelgaqtttqfkeleplddllqilee slveppisikdggllfkngfnaqldeyleaskngktwlaelqakerertgikslksifnk vfgyfieitranlnnfqpeafgynrkqtlснаerfitdelkekedilgaedkaveleye lfvklrehiktyterlqkqakiiseldclgsfaeiaqkynyvktfssdkvhlensrhp vvervmdyndyvpndchlddetfiylitgpnmsgkstymrgvaiisimaqmgayvpcdsa tlpifdqiftrigaaddlvsgkstfmvemleaqkaltatensliifdeigrgtstydgll alagamiyvaqtshaktlfsthyheltsldqmkclknvhvaaneyqgeiiflhkvkdg avddsyyigqvakladlpnevidraqvilnafeqkpsyqlshentdnqgtvpsyndfgrte eeqsviethtsnhnyeqatfdldfgynqqsevecqirelnlsmtpiealiklnelqsglk</p>

443.	atgattccaactaaacctcatgatgtgatttggacagatgcacaatggcaagttattat gcgaaaggacagacatacttggctgctgcagcaggttccggtaaaacagccggtcta gttgagcggtattatacaacgtatacgaagagatgatgtagatgtagatcggttactagt gtaacattttacgaatttaagcgcacgtgagatgaagcatcgagttgataaacgtatacaa gaagcatctttaaaggtatcctaacaatgaacatttaagaatcagcgaatcaaaattcat caagcacagatttctactttacacagtttctgtttgaaattgattcagcagcattatgat gtattagatcatcgtactctattttagaacaagtagtgaagcggaataatattattatta gaacaaactattgatgatgttttagaacaacactatgataaatttagatcctcactttata gaattaaccgaacaactatcatcagataggaatgatgatcaatttagaagttattattaag cagttatatatttttcagtatgtctaatctcaaccatttgaatggctcaatcaattagcg caaccatacaaaagaagaaaataaacagcaacaattaatgcagcttatcaatgattagca atgatttttatgaaagcaggatagaggaattacaaaaagttatgacttattctcaatg atggaaggtgtgataagcagcttgaagttattgaaaccgaacgcatgtttattactaaa gctattgaaaggttaaagtattaaatcacagatgttatcacgcaacatgaatttatgagtcgt tttccggcaataaataagcaagataaaaagaagcaaatgaaggcatggaagatgctttaaat gaagcaaaacaacattatgataaataataatcttttagttatgaaagtaagaatgattat ttttctgaaatgcagaagatttgcaagagatatgcaacaactcgcacctcagtgagtggt tatttagctcaaatagttcaagatgtgattcaatcatttgggtgtcaaaaacgaagtcgt aatattttggatttttcagattatgaacattttgcattacgcatcttactaacgaagat ggctcaccttcgctatcgtgaaacgtatcgtgaacattttaagaatacctagttgat gagtagcaagatactaatagagtgcaagaaaaaattattcttattataaactcgttgaa gaacacgtaggtgaacttgttcatggttggggatgtgaagcagtcatttataaatttaga caagctgatcctagttattttatgaaaaataataatcgcttttctagtagtggaatgaa agtggcttgcgcatgacttatcgcaaaacttctgctcagacaggaagtggtattctaca accaattacttgttcaaacatagatggatgaacaagtaggagaaattcatatgatgat gcagcgcaattgtattttgggtgcacatgatgacgaagtttccacatcctgttcaattacga gcacttgttgagggcaagttcagaaaaatagtgacttaactggaagtgaaacaagaagcgaat tacatttgttgaacaagttaaagattatttaacatcaaaaacgtatcagatatgaaaaaca ggctcaatcagaaaaagcaacataaaagatatcgtaatttttagagcgaagttttggctcaa ggcgtaactctcaacaagcttttaaaaaataatgatcccttttccagtaaatagtaag gaaggggtattttgagcaaacgaagtagcttctgtgcttttcaattttaagaacaatagat aatccacttcaagacatttatttagtgggtattgagcgttctgtaatatatacaatttact gaagaagaattagctgaaataagagttgtaagccctcatgatgattacttttcaatct ataaaaaattatagattgatgaaaaagctgattctagatttgggtgacaagttaaatcgt tttttccagatatatacaaaatatacaaatatagtcgaagtcacccggtttaccaatta attgataaatttataatgatcattttgaattcagtagctttagcggcttatttggaggt aaaggtagaagagcaaatctgtatgggctatttataaagctgtgaaatttgaataatca agtttccagaggttatttccaatttattcgttttatttgatgagcttattgatcgtaaaaaa gattttgggtgaagaaaatgctgtaggtcttaacgataatgtggttagaatgatgacgatt cacagtagtaaggattagaatttccatttgaatttactcaggatttatcaaaaaattc aacaaggtgacctgaattgcaccagttatttcaaatcaacaataggtttaggtatggat tattttgatgtaataaagatatggcttttcttccacttgcctctgtggcatatagagca ataaaatgaaaaagaacttatatcagaagagatgcgttttaacttatgttgcgttgacacga gcaaaagagcaacttattttagttggaagagtcgaagtgaaaagtcgttaatttaaatat gaacaattagctggttccagacacacatatagcagtttaaggaacgcttactgctaccaat ccatttgttcttaatttattggtgttttggctgaagcatcaatcgcttcatgccaatgat caaagatttgaagagatatgatcaattaaattctgaagtgaaagccagctgtatcaata gtgattgatcatatgaggatgtttcaactgaagaagtagtcaatgataatgaaataaga acaatcgaagaattaaaggccataaaatactggtaagtagtgtaaaattaaattcat caacagcttcttctatgactatccttttaagtttaacagatgaaacacatcaaacagctcg gtatcagagtttaaaacgtcaatttagaaactgaagaaagtaatacaaatatgatagagta cgtaaatatcgtattggtgttgcatcatatgaaagaccgaagtttcttaccacaacaaaa aaaagaaaagcaaatgaaatagggactttaaagtcatacagtcagcaacacttactttt agagaacaacggtttaaacaagagcaaatatttcaatataatcgatcgattgattgacaaa caacttatttgatgaagatgcaaaagaggatattagaatatagatgagattatgcatttcaat gatggcctctcttatatggaatatagctcaagctgcaatgtttatactgaattacctttt gtggttaaatcaaataaagttgattgagcttacaagtgaaagatgaagatgattccattatt caaggttagattgatttataatatagaagtgacggacaatttactttgttattacaaa acagatgcttttaatagaagaaaaggtatgagtgatgaagaaaatagggaaatcagctcaaa acaaaatcagatacaaatgacgtattatcgaaataactttagaacacatacttaaacga cccgtaaaaggttacttatttttttcaaatttggtacattagaatatagatgat
444.	mipktphdviwtdaagwsiyakgqdlvaaaagsgktavlveriigrilrddvdvdrllv vtfnlslaremkhrrvdkrigeasfkdpnnehlkngrikiqhagistlhfclkiqghyd vldidphftrtsseanilllegtidvleqhydkldphfielteqlssdrnddqrfsiik qlfyfianpppfewlnqlaqpykeenkgqqlmqilindlami fmkagyeeelqksydl fsm mesvdkqlvievetermfittkaiegkvlntdvtqhefmsrfpainskikeanegmedaln eakghydkyislvmkvkndyfsrnaedlqrdmqqlaprvaylaqivqdvigsfgvqkrsr nildfsdyehfalriltnedgspsrtaetzyrehfkeilvdeyqdnrvqekilsicttge ehdgnl fmvgdvkgsiykfrgadpslfielkynrfsssnesglridlsqnrfsrgevlst tnylfkhmmdeqvgelsyddaaqlyfgapydevshpvqlralveassensdltgseqean yiveqvkdlinhqnvydmktgqyrkatykdilvilersfgqarnlqqafknndipfhvnsk egyfeqtevrllvlsflrtidnplqdiylvglmrsviyqiteelaeirvvsphddyfyqs iknymidekadsrlvdklrnfldiqkyqnyssqspvyqlidkfyndhfviqyfsglig kgrranlyglfnkavefenssfrglfqfifidelidrkddfgeenvvgnndvnmmti hsskglefppfviyglskkfnkgdlnapvilnqyglgmdyfdvndkmafpalsavayra inekeliseemrliyaltrakeqlilvgrvkdelslikeyqlavsdthiavnerltatn pvllygvlakhgspslpndqrferdidqlnsevkprvsiividhyedvsteevvndneir tielkaintgmedvkikihqqlsydypfkvntmkpskqsvselkrqleteesntnydrv rqyrigvasyerpklftgtkkrkaneigtlmhtvmqlhpfreqrltkdel fgyidrlidk qlidedakedirideimhfidgplymeiaqadnvytelpfvvnqikvdgltsededsii qgmldliyesdgqfyfvdyktdafnrrkgmsdeei gmlkekyiqimtyrmtletilkr pvkglylyfkfgtleidd
445.	ctgtaccatcaaatgggtgctacaatttctcctgaatctgggtacaatccgataccatcac ccatcatcttttcagagaaaaactttatcaggtacttcagataacggtattatctcaccat gtccaggtgcgtataatttctgtttctacaatatcttccacatgtacaggtatcgtgaca cttcttcatcaattgttgggttctcacttgggttttg
446.	lyhqmvlqfllnlvqiryhhpssfqrklyqvlqitvlsbhvqvrkflflqylphvqdhl llhqlfhlvl

447.	cgcatactttggctcatcactatgcgtaatccacaaaatggcaatccctttatctgctagt ttaaatataatcttctcaatcttctttttatgtgtatctaaagcgctagtagcttcg tccaaataaaaacttcaggttcacacatgagttgtctagcgatggtaaacggtgttgc tctccccagacatgtgtcaatt
448.	rilwsslcvihkmaiplsaslniissiffllcvskalvassnnktsysmsclamvircc sppdmcsi
449.	tcacgtactttacgcgctctactcttaataactccaaacaggcatgatgtgtgttggta tggtcatcatctgaaatcataataaaaattcttttcaccttggttgtcaatccgtatact tcgtcatattttgcgacatctttaataaactctctcattcttatatcattcaatccagac atcaactcatcagtcattttaactatatctacaatgtttcctcttcaccattattcaca ttaactaaaactttgtcacctggatcaagatttcatccatttcataatgtttacaaaacgg tcaatatctgctctaatgattttgtcg
450.	srtllrallilqtgmmcgllwssseiiikffsplfvnpytssyfatslinslilissnsd inssviltistmfpssplftlktlspgskissisytkrsisalmils
451.	gcaggatttttgactaaagcagctacttaaatcaacttcattctctgcatcaaacacttct tctacgacttctttacgtgcaatcactctaaatgaaccttcgtccatatttaattctact cttacatttctggcactatca
452.	agfltkavlkstsslsntssstslraitlnepssi fnstltflals
453.	tattctttataagctttttaattagactaatatcatgctcattgattaccgaacaatt tcgatttgcatttttagatataaattgagccattaccaccaatcaaggatcatccgca aattcagggaatgactggaagcaagctctctaattgggacgtgctgatgcaaacattacattg
454.	yffisflirliscsliteticpflidieplppikvssansgmtgskslmgradanitl
455.	ttatcttcttctaaagctttaccttcaacgtcaacgtttggcaatactgcacctaaccat ttaggaaggtaccatgaagctttaccaaagagtttcgtcaatgctggaattaatgtcata cgtacgacgaatgcgtcgaaataacacaccgaacctaattgagataccattgacttaatt gcactgtcatcttgggaagacgaatgcgatgaatacactgaacataataagtcagcagct acgataaacagggtccactttctttgatctacacggattgaa
456.	lssskalpststfgntapnhlgryhealpksvfnaginivirttnasntpkpnaipidli alsswktnamtlniisaaatitgplsliptrie
457.	tcataactgcttgcttgaagcttaagcttaagattttttgttctgtattcagcatcgcttcta gcttttaatgcagaaccagcgattacaggtacatcgctacctgggaagtcatttcgctt ataaagtcaggaacttccatttcaactaatcttaataatcttctgctgctaccatgtca actttgtttaagaatacaactaatgctggtacaccaacgttacgtgataataagatgtgt tcacagatttgtggcattggaccgtcagcagcagatacaactaagataccgcgctccatt tga
458.	sstacikskifcsysaspsnafnaepaitgtsspgksyslnksrtsistnsnnssstms tlfkntnagtptrldnkmsrvcgigpsaadtkippsi
459.	ttagaacacactacacgacgagctttaacttotaactggcgtgatattattaattgct tcttcgaacacttctaattgcatcagaccactacggttgttcaacaagatcaaatgcagaa
460.	lepptrraltsntgmilliassntsnasrplrcstrsnae
461.	aggaggcgacccgccccagtcacaaactgccccgctgacactgtctcccaccacgataagtg tgccgggttagaagccaacacagc
462.	rrrppqsnppdtvshhdkwcglesqhs
463.	tgtgctattattccccctattgaaggacctaaccttcacctaaagctacaattgatcct ataaaaccaaaggcttttgcttgttttttcttctgttaatttctagctacaaccaccata atcagtggaagggaatgcagcagatctactccttctgtactaacctacaaaaatcaaaata aaaaag
464.	gccagtcacttctgcttccatttgattcaatacaaaaattatcttgaacatcttccga agcactgttcgccagtatcttgccttttcttcttctgttctgttatttcttgcacg gtcaaattttttcttaacttctcatttataatgatttttgcctttacatggcattcaac cggaaggcatattttgagcttttctcaaa
465.	tgtcgcttaactgccttcaccagtattgctagcatttggatctttagtttgcgtt tgctgctacaggtgctgctggttgcgctgctgctggagcattcgctggctgtgttgc tgcgggtgttgctatttattaggtgttgccttggttatttctctgacgtgtgttgc cggtgttgccttgcatttccaggttgccttgcagcgttattcggatcagcttgcattacc ttgtccagctggttgcatttgggttgcctgctcctcctgctggattagcctgtccacc ttggtttgctggttgcctgctggttgccttgggtggcaggtgcagctggctgctgt aggattagcttgagcaccagcatttgcgttaggctgtgtattggcatcagctggttgc tggttgatttttgcaggtgattttgctcctgctgcagacgctgttgcgggttagtaga tataaaagtaacagtggaat
466.	atccaacgtttcaggaataaatgttttcaaacactttgaaatggatcgcggtgttgc ttgatatactttgtagcgataacgtttacctaacaatcataacgacaatgaaatcgct atcgactgtaactacattgttgacataaatatcatcagg
467.	cggtataaaggtaaaagcaaaatgcacagcttgccttagaatgattgtccttttttgata atagcgttccattgcaatgacggcagaaggatggtttgcaacaatgatttgcattatc actttc
468.	atgcaagagtacaaaaatcggttaaatacgcttaaaaagcctataaatgttccgtatgag caagaaactgaaaaagtaggtggtttatttagcaagaatacaagaaactggaatggt gtaataagccaaaaagatttcaatgaatttcagaacagataaaagctgctcaagatatt tcggaagattacaggtatataaaagctggttagagccttagatgataaagataaggaata cgagagaaagatgatttataataaagcagttgagcgtattgaaaacgcagacgataat tttaaccactttacgaaaatgcaaaagcacttaaaagagaatatagaataagcgttaaag cttttaaaaatcttactaaaagagttagaacagatttttaggaagaaatacccttgcgga agagtttaataagttacagaagatgaacaaaactaaatggttagcaggaaacttagat aaaaaaatgaatccagaatttatccagaacaggaacagcaacaagaacaacaaaagaa caaaaacgagatagaggtatgcactta
469.	atgctaactactttcgtgttgccttacttcttcttacttccabcttcatttttattg
470.	ttgagcatctgcatcattattatcattcatgcgatcatttttgcacattattaaaaat ggcattcaaaaatacaaat
471.	ttgcctataccaagtactagaagtgaccaataattccagcaatcaatgcaacgtagct gttttaaacatggaatttaggtcttctgtatctaggtggttggctatggtttgtgta gaa
472.	atgcttttgagttaacttcataactcatcagtttttgcgtatccttttgacttttatt tatttcttccacttaccagtagcttttcttttttacagttattttcgggttgc

473.	atgacttgtgaaaaactggaaaatttcttgaccagtagcaaagccggcaccaacgacaaac accaacaaaggcaaatgccacaataatggactcttt
474.	ttgattgtcattagtaacgttattgccattattttgatttttatctgttttgcact atcatcttgttgatcattttcttcggtttctgtcttttatgctagatttattttcttg ttcttgggtattact
475.	atgtgcagaaattgccagcattcaccagttgtttcattagggatatcatagttaaagtc ttt
476.	gtgggtatacaacgcaacgtatatgcatcttgtacacgtattttctgattgtcgctcgta atgttgatccttctaaccaatcacgcatacgcgctgccacat
477.	gtgacaaatatcacactaaacagtgcatgttgagatgctacgataagcgattttttat caagtccaggtat
478.	ttgtgcagtagtagcttgggttactattcttaagcttttctgtcatctctcaactgttt aagtttttgatacgcattctgtttacgttgattgtacgtttatattgattttcagcttt tttaagttctgtattcga
479.	ttgccttctgttttataattgttcaacaagtgtttatgcttagcggactgcttctgtact gcgtcaacttgccttttttagttgtgcagtagtagcttggttactattcttaagctttgt tctgcattctcaactgttttaagttt
480.	caiiippiiegpnspkatidpikpalpcfflvi flattttiisegnaadptpctnlpkiki kk
481.	ashfsfhliqykqiilni frstvasillffcllfmiyfrtvkfflnfliindfcfymafn krhilsflk
482.	crintaftslasiwilelcvcycrcwlrccwsirwlcliercciiirccclvisltclvc rcclisarlcscvirislitlsswlcilwlcscswislstlvwlycwlslvgreswlc rislstsicvrlcigiswlcwlllcrlllccrrcrrvsryksnsgn
483.	iqfrfncfqtllkwiavlcliyfvaifttytiittmkividcnvividiniir
484.	rykgkakcisllrmivfliaafhcndgrmmvckgmicitf
485.	mgeyqkslntlkkipinvpyeqetekvgglfskeiqetgnvvisqkdfnefqkqikaadi sedeyiksgralddkdei rekdllinkaverienaddnfnglyenakplikenielalk llkllkelervlgrntfaervnkl tedepkinglagndkkmnpelysegeqqeqqk qkrdrghml
486.	mlttfavvllffllpssfl
487.	lsiciliiihaiifvhiikngiqnnn
488.	lpipstrsapiipainatmtvlnhgnlgillylgvwlwfve
489.	mllyfiillfclilltfiyyfpltsmtfffyysfrfv
490.	mtceklenfltskagtnndntnkgkchnnglf
491.	lvisnviaillifcfvctiilliiiffgfcfmrriifilflvit
492.	mcrncpafstscfirdiivkcf
493.	vvynatymhlvvhvflivaslmlilltnhayalph
494.	vtnitlnsafadatisvflyqvry
495.	lcssslvtilkllfcisqlfkflirilftlietfifliffkfcir
496.	lpsclycstsalcladcfctasalfscavvawllflsfcsaslnclsf
497.	caagtgtgaaaatgcttcagaaacatctcttctgtgatgctattgttacttatgctaaag ataaaggctcttaatttacttgataatgacacttttaaatcaattccgggacatggtatta aagctacgattcatcaacaacaaatccttggggcaatcgaaaaat
498.	aagaggcttgtttatgcagcaacacctgcaattcaacttgccaaagattatcttgcacac gccctaacgaaaagggttcttgcattgctagtgcacagctcggtatggattcattctg gtgggtgagctactcaagggtccggtgcagttgcaa
499.	ctggcctacgcccagtttcagctattatgcacgctgggtattgttaatgctgggtgctta ttcttacacgcttttctccggtatttaatagcagaaa
500.	cgtttacgataacttcatacatcattaaacttgacgcacagacgcgttcaagctattg acatgtcccaaccattggaatcttaata
501.	tcaagcggtttttgtctatagcacttactatcaactttttctcgattttcaaatgttggatgc aaaaaacatataaggagccataataatgaagaaagaaataatagaatggattgttagcc ataatcggttgaattgttatcgtcacacttgtgcaaaagtttttattgtctcttataca gtcaaggagcatcctaattgcatattatcac
502.	agatctgtaccacatatgtgtctttaaactatgcgaataatagcgtcagtagctcgtat atagttggcttctctttatccgtaagttgtgca
503.	actgcaataatcatcagcttcataattacgcttaccaacatttcaaaaacaaactg atgggatatttctttaacataatcgaattgaggaataagttcatcaggaggtgctgggog atttgtttatagccatcatacatttcttctgaatgttcttgcctcatatcccaaca aactgctacgtagtaggttcgatttcttctgtagcgtaaaaatagtcttcaaaaacc ttgaataccattttaggaattcctttagaattgtacataaattgattgtg
504.	ttctttttagattgactcaactcaactggctcaaatactgtccggttagaattgctttac atgtattttatgattttcagttataatgaatcatattgtaagtaccatttgt
505.	atttttatctacatgcgggtgtagtacaacatcagcttggaaaggctgaggttttgcca ttaagggttcgattcccatcaccgctccattt
506.	ctaaagaatatattgaggattgtatttattgtctggtttgacagttttcttctgtgct ggccaaacttattcaaacgcagcatttattgatgaatatattcaaacatttggatggagc cgtacagaagtt
507.	aggaattccaatcaaatgtaccaaactttacagcggtatattgtacttatatttattgatt atgtacttggaggactttagttcaagttccaatgccaattttagcaggtattatgggt atgggttctgagacaatctactgttttgacctgat
508.	aatcaacgactcgaggaacaatttctctcccatcacagctcagcctta

509.	atgaacaatttttaaacatcactcaacgtaaatttatcgatggttgattatcttatcc atctttatagtttagcattcctaataaaatggacatttaagtatctatcgctttatcttta ttactctttaaagggggcgctaggtgtcggttcaatttaatacactttatagtcgacga tcgcaaatatacaccatcatgatcacacagagatggcgctacatagtaagtatgaaa tatacttgatttatgtaatggagttatctttctatttaaatatgtaaaacattggata agaatgaatgatataagatttatcaagctactatgattcttatgctactttatctc ataatgagtttagtcgtatctaatgatccgatagaatctattcttaaatgcttaacttc ttataccgctaattttgattgttatgtatgttagtttaataaaaaagataaagaatctc attaacggattaatcaatttatcacgctaggtatgcttactttttatattatagtt atagcgccaaaatcatatttaattgatgaggaatcacttagaagtggtttcaaggatgca cattcattcgagttattcttgcctatgggtctagttctatataatggtaacaataatcaaa caacaagattatgatgtattcaatttatattatataaatattggaatgatagagctctat ttatcaaatctctgctcatattttcatatctgttattttatgtctaatgcttctattaccg ttatctcacataaaaaagagaatataacatcccatatttggtgctatgatactaatggca attgctataataatcaaccatatttatcatctcttttattaaactaatcttaaaaggg aagaatagccagaggtctttatgcccagtgatagatattaaagctattgattatgctg ctaactgagcatctcttttaggaagcggttttggtataccaatgataaaagcgagttca gaaatacaatcttttaattagcaacgagtaatatcatcttcggtatgattatctttact ggataataggacttactttatgtacgatatacatgcttcatatgggtacttttagttact tttccaaatgagttactattttatttttaatacctatctttggttaatatggattat attattttatttgattccgtggggctaggtatatgtgttatattttggggaatatat ttaaaagaaggtatgtatcaatacaacaacggacaattgg
510.	atgacaaatcaaaaaactgtgggtctagtcgctcgcctccaggtgttactgaacgccttgca gaaatctcacaagaatgcttaaaatgttatctacacattatgatcatcagcaagaa tggatttttgatttagttacggatccgcttactgggttttgcgtgaatctgtatagaaatt tttgggaaagtagccgatttatcacgataagagacaaatgggattatgtgatagcaattaca gatttacggatggtttgcccagacagcagtgatggcattagatattaaatggaaaatgggt gcagctatattctcatatccggcatttggctggcgctccagttaaaaaacggttcaagcat gcgatttataatattttcaagaattaaatgaagctgaacaagaagtcgtaattatgat aataatagcaaaatagaaaatcagtaaaaaaacaatttccgctctctaaaaatagataaa gaacacatataatgaaagaacagactcttatcacttaagatatttatcaagttccagct tctagagcctggtttcgcttctgttagtggaatgacctttgcgaataatccattaaatag atggcaagtttaagtaatatagtagctattgcatcttactacaggtgcatttggacttgta tttacaacgatgtggcaaatggcttataactttcaatgtggcgcttattttggaatttca attattgagattattggaatgctaatatggataatgatgtcacatgatttatgggagcca gttaataaaagcaaccataagcatatttacttgggttatcaactcttacaacaataatgaca ttgatttttggcattataaatttatattatttcttatttactattcttaattgtctgaa atcgatatttggccatcaggatttcttaggtcagcaagttggattgaaaggtcctgcaggc attgattttgattttaagttatccatggtttgagcgttcaatttctacagttgcaggtgca ataggtgctggtttacttaatgatgaactcattaaagaagcacataggatcgtcag cgtgtaagatcacgaagaacacgtcga
511.	atgaaattctgcctcattgtggaatccgataaaaaaggaaacagtcattttgtataaa tgtggaacacattttaagacatcgacacaaagaaaaagtgaaaatcaaatgaaacatag cgtgaacagcaatcgatatatttctcgtgaggaagacacacatcatgattcaacattttat aaagaacaaaaacatactggttggctaatgtattatcaatttatatttgccttgttgata gcagcgctattgtatgggtgctactatgcttacaatcattatattagtgatgagcaagtc caccacaaacagagctctcagcaatcaaatgaaagtgtacaaaatagggaccaatccact gggtccaaagcatttgatgttttttagtgatgactttgatcaaggttatatgaagtcagcttca acaagtggtatagaggtgtttataatggaatgacacgtgaagaagtgaagataaaatt ggaacatccaatggttctgtagaaagtttgaagtgaggttacgaaacatattggtgattta gctgtagcctacgatgataatgaagttgttagcgtaggtgtgacacctaatacatatttca gaagatcaatttttaagttatgtataatgaaccggatgtatagaattcaagccaactcatt tatgatagtaacaagataatgactctctgtgttagctaatgttaaaaatggagatgtt actgtcatgtgaaaatgtaaatcaatt
512.	atgttattgtttatcatagaaatcataatcatgattctagcgtatatttaggattaaga actgctggtgacatgggatgtggcatctttgctatagtagcgcagcttatcatgatattt ggattccagttacctccaggttcagcaccagtgacggcagtggttaatacatattatctatt ggtatagcaggtgtgtacgttacaagccactgggtgattgactatttagtatacattgca tcacgtgtgattgaacgctttccaaaatcaattatatttagcgccaatgattgtcttt gtctttgttttggaaattggtactgcaaatatagctctttcacttgaacctatcatagcg aaaactgcacaaaagcacgaattcagcctaaacgcgcattaactgcttcggtacttaca gccaatttagccttactttgtagcccgagcttctgctacagcttatattttctgta ttagcagggatgaaatatcgatgggcaagtttaagttattgttttacctacagcttta attagttatgttaatgcttagtacattttgtacattttaggacgaaaagaacacgtgcgt gatgagtcagaacgttttagttcagatgccagaagtcgaaatcaaaaatgacttttcat aaagtaaaaataggtgttatctcattcctattatgtgtcatgggtatttttaacgtttggc atatttccataatctcatgcccgaattcaatgtgaatggagatgtagttaaagttgagatg actgaaattgttcagttctttatgtatctcagcgtacaatacaatttatattataaaaa atcaatacttctgatattctgtcatcgaatattacacaatctgcaatgggagcactttt gcagttcttggcccggttgggttaggtgcaacaatttttaatgtccacataacttaaaa atattgaaaaatgatttgggtcaatttattagtgaagtaccttggcttgttatcattct gtttctgttagttgcaatgattgtcatttctcaaacagctacagcatcaattatgggtgccg atagttatgagtttaggtatacctcccactctattttgttgcgagtggtacaaacattaaat gtgaatttctgtattccagctcaaccgacactattttgctgtagaactagatgaaaca ggtagaacaagacctacgagcttatgataccaggtttttgtttataacagtatccgtc attacaggtattgttatttaaaacatttttaggat

513.	<p>atgggaagtttttaacggatgactcgaaagagaatcctactatttatcaaaataaa gatgggcatcttaagcgacgttacgtgtacgtgactttcttgacactaggtgttggtaca attgtctctacatctatcttctactttaccaggtgttgcggtgagcatgcccagcct gctgtggcatctatcttctttagctgcccattgttgcaggtctttagcctttacttat gcagaaatggcatctacaatgccttttgctggatcagcttattcatggaattaatgtactt tttgggtgaattattcggatgggttgccggttggcgcttttagcagaatactttattgct gttgccttctgttgcctcaggctttctgtcaacttaagaggtcttattgcaccattaggg atttctttacctaataatcattatctaatccatttggagtaaacgggtgtgcatgatc attgctgctgttagtgatttttaactgcattactattatcacgcggaatgaacgaagcc gctcgatggaaaaatgtattggttatattaaagggttagccatcatttatttgggtgatt gttgggctaactgcgatttaatttcagtaactatataccattttatccagaacataagggt actgaactggcgactttggaggttggcaeggtatttatgctggagtttcaatgattttc ttagcttatattggttttgactctattgtctgaattcagctgaagcatttaattccacag aagacaatgccttagaggaatttttagggtcactcatagtagcaattgtattgtttgtggcc gtagcactgttcttgttggcatgttccactactctcaatacgcgtgataatgcagagcca gtaggttgggcatctacgagaagtggtcatggtatttattgctgcaattgttcaagcaatt tctgtcatcggtatgttctactgcattaatcggtatgattgtctgcaggttcacgtctatta tattcatttggacgagatgggtttactcccttcttgggttaagtcaattgaatcacaaacat ttaccatactcgagcactgtctactttacaatcatttgcgtagtttactcggtcaatgttc ccgtttgttctttagcacaattgtatttccgcaggtacccttgttgcattcatgtttgtg tccactagcaatgtatcgattaaagaaacgtgaagggaaagatttaccataagccagagttt aaattacccttttatctctattttgcttgcattacatttatattagttattgctagttatt tggggattaagtttgaagctaagttgtatcacactgatatggtttattttaggtataatt atttatttaatttatggaatttagacattccaaaaagaaatgtagaagaagcgtagcaagta cctagagaa</p>
514.	<p>atgacaagaagaaacgttttatcgcttagtgagttggttgcctaaacaatctaaagacat aaaaggaaaaataacactttacacggcaattgtacttttagtagcgttagttctactcata tttgcgtttaaatcaatacaagtagaacctgtaaaaagtgatagagagacaaagatagc attcgttatcacctatttaggttaacgtcactttaaataaacatattcgacaaactaacttg aatgagttttttaaagggtattcaagatacttttagatcatagtgatttttcaacagggtca ttaattagtaaatgatttttcaagaaatcaaaagataacataaaataaaatattgaaaaat atcatagttcttctacgcaagcataatgtttaaagggttaacttaatacagcaatctatggat aatattcaagcgacagcaatgatgagaaaaatagatttcccaagcaggttataattttta acaggttaattggttcaaatccaattaatagtaaaactgtacaacaagacattaaaggtaaa aaaaagtcataattgttttctatttaccgatcgaattcactataactactctttaaanaac acgacgtcaatttagtttagatccagctatattttatccttttaataaaaaaattaaaggaa aataagtagttagctgttagtcaattgttagattgggggataccataagacgaaatgtgact acacgtcaaaaaagaaatagcacatgcgttagcgaatgctggtgacagatgctatttgggt cataatcaggttatcaaaaaagttgaaaaattataagcgaacgcctattttttagattta ggtaacacacgtctgataacttcttatcaaaaaatcagaaggaatgattgtacaacaa gactgggaaggttgcataatcagttccatatacaccaattcaatcaaaagatggaaaa atctcaaaagataatgaaataaaatggatcatattcgattcaaaaaataacattaaagat aaatcaattgattttaaactctgatcaaaatggaggttataacttttgaatat</p>
515.	<p>atgattgaacatttaggaatttaaacaccttatttgggatatttagtatcatttaacca tttgcctagcagacttattttataaaaaaacgaattggtttcttttactagcaccttta ttcgttaagtattggttgcaggtatttgcctttttgaaattgacaggaatttagttatgagaat tataaaatcgggtggcgacattattaatttcttctagaaccagctacaatattgctttgcg attccttttatctcgcaagcgcggaatttataaaaaatattggttacaataatttgggtggt atagctgttgggtacaattatttgccttgttattatttattcttgggtgcaataacattccaa tttggcaatcaaatattagcatctatgtctacctcaagctgcaacgacagcaattgcat cctgtatctgacgggtatcgggtgtgcaagaatttaacctcactcgcagttattttaaat gcagttgtctatttctgctttagggtgctaaaaatagttaaattattttaaatacttaacct atttgcagaggacttgcactagggaacagtggaacacactttaggtgtgcggcgagctaaa gaattgggtgagactgaagaatcaatgggaagatttgcagttgcatcgttggcggtatt gttgtagcagtagtttctataacttgcctccaattcttatta</p>
516.	<p>atgaaaagaacagataaataatagagatttcatacaaatatgatgaccaatatacaaatcat cgtaaaacttcagaagaagatattgtacgacaacatcaagagtcccaacagagagcaaat tcaaatcgttgcacacaaagtgaagaaatgatagagagtagtgaagaaatcatcctgaacgttat tcaaatggaagagactatcgacgtgagcagcaatttgaagaagaaatgaagaaatcaagc aaaactaaaaatggctgattgcaatcatagttattttactcattattgtagctatcttt atcacgcgtgcaattatcaatcataaataatgataaagtaagtaatgacctaacgtttca caaaactataaaaaggaggttgaagaaatcaaaacgacgacattaatcgacaagtgtattca gccaaaagcgatataaaaaataaaaaggacacccaatcccaattgataaactacaaaat caaattgtatcaattaaaacaaaatgaagaaactaatgagggttctaaattcacaaaattt tatcaaaaccaaactcgacaaactgaagaaatgcaataacgcctcaacttaataacgaaat caaagttaaagttacaacatgcttgaagacatcaatacaaaatttgatagttataagct aaactagaaaatatcttgaatggatcaaatcagggaac</p>
517.	<p>atgaacatgaaaagggtgtttctcagcttactgttacagacatttagtttgggtgcaggc ttttagggcatggagatcatttctccattaatgcccatttatttcaagaatgttgatatt tctccaggacaaatattctgtcatttttagctatttctgttatttttaggttctgtactacgt gtaccatttgggtactttaactaacattttaggagcgaattgggtgttttctgtgagtttt attgtactattacttccatttttcttttaggtcaagctcaatcaccgggtatgctaatg ttatcaggattctttctaggaattggtggcgcaattttttagtaggtgttactttagta cctaataatttttcaaaagacaaagtgtgttagcaaatgggtatattggtgtaggtaatt attggtactgcagtttcatcattttgtgcccaggtgttagcaggtgcaattgggtggcaa aatcagttcgttagttatttattatttctaatgtatttgcatttttaattgttttttta ggagataaaaaatgagccgaaagtgaagattcctttgtaggttcaagtcaagacctatct aagaattataagttgtatttatttaagtttgggtattttattacttttggagcttttgg gcttttgggatttttttaccgaactttctagttgatcatttttagttattgaaggtggat gcaggtattcgttccaggtatatttatagcactagcagcttcttaagaccggttgggtggt gttattggtgataaatttaattgacgtacaagcgcttatcatcgacttctgtgataatgatt attggtgcgcttataatgaacttatctagtcatttatttctgtttacgtaggctgttta gcaatttctctgtgcaggtataggttaattgttttaattttaaattagcaaccttcatac ttttcaagaagcaggttcagcgaatggtattgtatccatgtagggaggactaggcggt ttcttcccaccactggtgatttcttggtaacgagtagtactggttcaagtcattctcgct ttcttcttcttggctatatttgggtgaattgctcttattacaaatgattcattttaaataaa aaagagaagactattcgtata</p>

518.	atgaaaaataaaaaaggattagggcataggtcttaccacaattatgattatcggttgatt gtactagtaatacatgatgttcgtgggtggtaagaagaatcactactacggtattatgaaa gatagccagcatttggataaaaatgataaatactaaaaatgaaaaatgaaaaaacgta gaattacctaagatgctaataatgatacagttaaaaaagaagattttgtgagctctttaa gatgaaaaaactggaaaaattactaaagttaagaagtttaatacagatgacgtacccat ggtttaattgtcaaaaatccatgatatgggtaatatgaaacacggaatg
519.	atggctatgtcattactcgtgagtccttgggtttatgatgacactcacatctgatata ttagaagataattctatcatttaaaatagaagtgaatgcaatttcogtatatatgaagc tctatttactaatacattttggtttacttttcatttttaaagatatgaaaaaatatgg tactggctcatttcaatagttatgattgctgtgataagttatgctggacacgtgtggtca caacaagtgccatttatggccaattatcataagaacaattcatcttagggctaacgtta gggttaggttactcgtttatctcatttggttatgctattaaagtgaanaataatcagttg acgagtgaagaacgtatgctttttaaagttaatacattgctgtgattatgctcgtttt acagggatttttaattgcttatgataaacgaatactttaacactttggaataatgtgagc gcttggctattttatcttctgtcataaaaaatcgaggaaattatgctatgatgctattagg ttctatcaaacgatgcgtgcttttgagacaacgacacagggtccatcgttttgcactgatg actgaattgttaattgggtatgatatatttttcagggtatca
520.	atgaaaaactctagatttctgggttccaatgggctatgatggctttgtattttcggt atcacaatggcatgttcogtgatactcagagatttcaagcagactatcggagtgaaacgt tttggcttttagtataaagatttagctcctttcatagctgcaattgtgtcatatttagta tttaagcacagaaaaagaacaattagcaggattgaaatttctatcagttttaaagtgtat gagcgtctacttttagcactcattctaccacttatcattttaatgattggcttggtttagc tttaatacttatgctgatagtttcatcctattacaaactcagatttatcagtatcatta ttaactatattaattgggtcatattttaaaggctttttagtgaggtttgggttccgttct tacttacaanaataattcttgaacaagaatgaacacatttttgcgagtatgtcgttgggt cttattttctcagttattacagctaacacgacatatgggtgtagaatacgcggataccat ttcttatatacatctagttttcaatgatttatgggtgaatttaattagagctactaatggt cgtacaatttatattgcaactgcttttcaacgcatccatgacttttgcctcgtctttta tttagtgagaagaacaggcgaccttttctcaatgaagtcacgcactttctacaacaatt gtgggtgtttcatttattatttagtctaatcattcgtgctattgtttataaaacgacg aaacaaagttttagcgaagttgatcctaataattatttctcatattcaagatgaagaa cgaagtcagaagacgctcttcaacttcaaatcatgatgtatcacttaagaatgaacaa aagcaacaagatattgataatgacaacatcaatcaagaacctaataagagtgcagat gcacttactacttctaattataaagaagacgctctttagttaataaagaacggatata actcacaatgataacattaaagatcattcaacttatccgaagatagacatcactggt gtcaacgatgttaaagatgaatttcacgaagtgaagatcataaagccgacacagataaa tcacat
521.	atgaaaaataatgagttgcaaggggattgaatgcagtcagatgcagatgattgctctt gggtgaacaattgggtgtggtctttttagggagcaacaagcacaattagtgagcaggt ccatcagttattcttgcataatttaattgctgggtatttttttatttttaatacagagagcc atgggtgaaatgatataatttaataccaaactggttcttttgcgacgtttgctagtgac tatattcattccagcagctggctacatgactgcttggagcaatgtatttcaatgggtgtgc gtcggcatgagtgaaagtgttgtagtaggagaatatgaactactgggttcccaagcctt cctaattggataccaggagtgatagcagttctctttttagtggtgctaacctagtttca gtaaaagcgtttggagagttlgaattttgggttgccttaattaaagtgttaactattgta ttaatgatttatgcaggattaggatttaattttatttgggtataggcaatggagggaatcca atagggattttcaacttatgggtcacatgggtgatttatgccaaatggattcattggattt ttcttggctttatctattgtgattggatcataccaaggtgttgaaattgattggcatctca gcaggtgaacacaaaaatcctcaacaaatattgtaaaggcagtcacggagtgatagg agaattttaattttctatattgttgcaatttttgcattgtatcagtatatccttggaaac caattaggtatgtattggtagtccttttgttgcaacgtttgctaaagtgggcattacgttt gctgctggtttaataaaacttttagtcttaacagcagcattgtctgggtgtaattcaggt atttttagtgcaagtcgaatgatttatactttggcaaaaaaggacaaatgcctaaagta tttactaaagttaataaaatggcgtaacctttctacactgtatttgcagtatctatggga atatatttgggtgctttatataatgttatacttccatttaattattgatggagctgatagt atctttgtatatagtatagtgctctattttaccgggaatgataccttgggttatgatt ttatttagtcatctaaagatttagaaggttacatcctgaaaggttcaacaatcatcctttt aaaaatgcggggaggggcaatttgcaattatttaactatcatgtttttactcctagtatta gtcgggtatgttacttaacaaagaactgtatgcgttggttatgggtatcgtgtttta acagctgtgacactttattatcttattagatatcaaaaaagggaacgacaaata
522.	gtgaaaagacttaagaattttattctcggcttactcattgtggctatagttggcttcta ttatttatgtatatagatgatagtcgcatcacaagttatcaagactacttctacaattt aattgggtccaaccactattgattgggttcgaggtacttatatttaacggacttata ttagtacttagtatttttaaacctacgcacgcaaacctggactttataaaaactttgat gatggacatatttacgtatcacgtaaagctgttgaaaaaacaatttacgatataaatcgct aaatatgatcaagtttagacaaccaaatgttgtaagtaagctttataaaaaaagaataaa tcatttatgtacatcaagcagatttcttcgtacaaacatgttcaagttaaagattta acagagagtatccgtgctgatatacaaaagtaagtgtgaacactttactgaaattcctggt agaaaaatagaagttaacgtacgtgatcagaaaaacatcgtggtccaggtgtattg

523.	<p>ttgcaagattttgataacttaattcctggctgggtttaaaccatttgttcaagtcgggaat gacttaatttgggtctcaatatttatttggattattataacagcaggtttttctttaca at tagtttcaaaatttattcaactcagaatgttaccagagatgtttagagcattaaactgaa aagccagaaactttaagtagtggtagaagggtatttaccatttcaagcttttgcgatt agtgctgggtcaagagtaggaactggaaatattgcccgtgttgcaactgctattgttctt gggtggcccggtgcagttctctggatgtggattattgcttttattgggtgcagctagtcca tttatgggaagcaacgcttgcctcaagtttataaggtacatgacaaagaagggtggattccgt ggcgaccagcctattacataacaaaagggttaaaccaaaaatggcttggaaattgtattt gctgttttaattacagttacatttgccttttatttatttaactgttcaagcgaatacaatt gctgaatcattaaatacacatacaatatttagcccggttaattactggaatagtacttgca gttattacaggtattatcatcttgggtgggttctgtagcatagctacactatcttcaatt attgtgctcattattggctattgtttataaggtatgggttttaactcattttattactcaat atagatcaaatgttacctatgtattggcactatttataaagtgacattcggagttcagcag gttactgggtgtgtgttaggagctgtatttcttcaaggtattaaacgtgggtttattctca aacgaagctgggtatgggactgtgcacctaagctgtgtgtacatctgtgtgccccatccc gttaaacagaaggtttaattcaatcatttaggtgtattcttgcagactatgcttgtttgtaca gctacagcaattatgattttattatattctgggttggcaatttgggtgtagcgcgctcaa gggtgtagcagttacgcaatcagcgttgaacgaacatttaggttcagcaggagggtatttct ttaactgtagcagttaccttatttgcatttttcatctgtgttaggttaactattactatgga caatcaaatattgaatttttattcacaataagatgatatatttatttttagatgtttt gtagtacttttagtattttaggtgtgtgtgtgttaaacagaaacagtttggagtagctgcc gattttattttaggtctttagggcaatagtaaatatcatatcaattataggtttgtcgaaat attgcgtttgcagtgatgaaagattatcaagacagcgttaagaaggttaagagacctgtg tttaaacccgaaaaacttagaataaaatttatttggcatttgagacttggggacaacatgca aaaaatgccaaaaaaa</p>
524.	<p>ttgaaaaaagaatttttagagtgagattgttggcatagccgttggcattgcacttattgcc aaactatttattggaagtgcatgaagtatttgcctcaatagctactatcattgggtcagtcaca ttaaagaatggggagcgtgttagtggttaaatatttgggtataaaattagggtggcgttgaa aaaggaaatgtcatttatttcatgtctataaaaaagatgattatgttaaagaggttatt gggaactccaggagatagtggtgaatataaaaaatgatacactctatgtttaaaggtaaaaag caatcagaaccatacttgaactataatgaaaaacgttaagcaaacgtagtatatcacaggt agtttcaaaaacaaaaaatttaccaaatgctaatcctcaatctaatgttattcctaaaggt aaatattttagtttgggggataaccgtgaggttaagtaagatagtcgttcatctgggttta attgcaaaagaccaaatttggtaaggtatcgctcagatattggccttccagtgaaattt aaatcctaacttttaatacaataacactaaaaat</p>
525.	<p>atgttcaataaggtttgggtttagaacaggaatatttttattatgctgttcatactcatc aaactatttattggaagtgcatgaagtatttgcctcaatagctactatcattgggtcagtc ttccttccatttttaatttagtggtatttctcttttaccatattgttaccctttcaaaacata ttagaaaagtggggctttccacgttgggctagtataacaacaattatcattaggttaata gctatcatcgctatttgggtatcattttatagcacctatcattatttccaaattataataac ttaattaaacaaacaccatcattacaaaagaagccgaacaatttaatttctcgtta agacaaatgggataaattaccagatgatgtcacacatcgtatttaataaagcggttaaatcc atggggagatggcgcaacgtctattttatctaattcagtgctcatattacgtcttctcatc tcaactgtatttttataataatgggtgcctttcttctgatataatagctaaagatcat gaaaaatttatccagcaatcggttaaattttcaaggagaaacgttaagtttttgggtga gattttataaaagacttaaaccttcaacttataatcattatcaaggtcaagtgacagtt agtatcatcttaggtatttttataataggttatcagattataggattaccatataca cctttatttagtatttattcgccggcgttagcctaacttaataccatttttaggtccatgggtta tcttttgcaccggcagcgatactaggtattattgtagggccttcaacttttatttgggtta tgtgtcgtaacatttaatgcacaaacacttgaaggttaagtgataactcctaagcgaatg ggtaaatcattaaagcattcatcatttaactattatttgggtcactacttgcagctggagat ttgggtgggtttcactcatcttcttgggtgcagttccattatcagctgtaatacaaacatta gtgagcaacatttttaatatcgctcaacgtatttgcgtgataaagcaaatagtaattgtaaa gat</p>
526.	<p>atgaatacaatcgtaaaacatacagtaggttttattgcttctatcgtaactaacgtttta gcagtttttgaactctatacactaataatgacattccatgctaaggttaactatcatcttt gggttttgccttccattcaagctgccttcaattattaatgttccatgttaactgaaggt aaagatggagcgtttacaatcggttcaaggttatcttggcaattatcattacttttagtaact gttatcggaacatactgggttaattgcaaggtggagacactcttctcactta</p>
527.	<p>atgtcttttcttaggaacacaccgaaattatatttagttatatcatcggtatcggtttca ctttttacaggtctcattatttttataacttacctttaatacaaaatttaaagggtgac aaaaagggtgatacgcgtgtgcataacgtatgggaattcctaagtgcctttttgcccag attataaaagtgtaggttaaatttatttgggtggctttccaatataagtgccatagtaac atcgtatttgggtattctagtgatgctgttaggtgcacactttatttgaactattaaatac gatttatgacatttcaattttcttttagttatttggcattatgtactttatcattacatta ttgcttaatgacacaagtgatggcttttttgcctatcgctctttatttcttctttacagtt catattgggtacatagtttataaagatgagttgaaccaagacaatcgaaagaaccattat atgtggattattgttaacttattggaatgagttatcttattacccaaatttgcgtatatgga cgtattgacgcaaatgaaattgaatcaattgatatatttgaagtgtaaatacattcttcaat attatgtggttattaggtcagatggcttatatggaatttcttattcctaagacgttcat ccactcactaaagaagaatttagggcgaagaggaacctgaaactttcaagaactaataaaggc aatgtatctaatcaaacataaggttcaacttaaaacaactacaaaataagacaacaggat gcacgtaagactagaagaagtggtgatttagataaaattagagccaaaagggacaattt aagcaaaaaataacagcatagtagatatacaagaggagcgaatttcaaaattggatgaaa aaacctaataagggttaaacctatgtatgttcaattgttttgggtgtaattattctgttt tttgcctttctagaatttataataagaaacgcattattcttaactgggtgaatgggagtt tcacaaacgcaatagtagttgagtggtgaacattatttgcacttttattattattt atttatttgcactacatttaacttattttaaaggataaattattatttataaactc tttatgggcagtttttattctttaaatttcttacagaatttatcaattattatggtacat ggattattattcaattttcattacgcaactcttattattatgcttattgcaatgatt gttgccttattctttacagttgagagaaaa</p>

528.	atgttaggagagcaatatatacacaataaagcgtccagcaaatcggttaactgaaaaata ttaggttgggttagtgggtattcttactcatattactattgtttcaatgtttattgcg ctcgtaattcttttagtaatgatagctcaattgccaatttagaaaacacacttaataaat gaactcgtacaacaaatttttagccaataatgattttaagtacaactcaatttggatttgg ttacaaaatggagtttgggcaattattgtttattttattgtttgttgcacatcgtttt ttagcgttaatttctatgaataaagaattttgtctgggttacttttttaatagctgct atagtacaattccgcttgtattgttgattgtaacttaactcattctctattcttt atcattgcaatgatgatgttttgcagaagagatagaataagaacagtgccatcttattat aatgaatatgatcaaccatactatgatgagagaggtttttatgaaccagagtgcaagaat gaacatgggataaattgatgatgtgtatgaacctatgcatactaaaaaggaagatagaat acaagcgtcaattcaatagaantgctcagcaacaagattcctataatgggtataactgat aatcaacccgtagaagatacatcttccgatacaactttattcagacgaatattgtagataat gaagataaattattcctaatttccaaaaagagcagttgaaagtgaatattgcatctcaaca actgaagatgaaccaacagtcattgtcaagacaagctaaagtacaataaaaaatctaaaaat acggattttgaagatgcgcaacagggaacataatggaaggtaattcaatttgatgacgttagga gttgttgaaccacaaattgatcttaagaactaaaaagcgcaaaagaaaaagagaaaaagca gaaatacgtgctaaagaaaaagaaaaagagaaagcatataaactgaatgaagaacga agaaaaaacagccaagtgtgttaaccacgacgtatgaattatgaagaacgtcgacaa atgattataatgaacaagaagatacagataataacttaaatcaacaggaagattcaaaa aaagaaaaat
529.	atgggaagagaataaaaaatcaaccttaataatgagaatattgtcgaataaagacgataataca atccatttgaatgatagtcacaagttaaggaagcttagagcttttttagacggaataaaaaac gctcgcgaacgcgaagagcgtcgcatagataaccaagtaaaagaaaaagatgctacgtct acacaatcacagcttagaactaaaccaatggataaatttattgataatcacaagtcgcat aatcaagatgaagaaataaaaaagtgatttaattgaggataattgttaatgtagagatgac aatcaaaaaataataatgataaatttaattgatcgtagtgttcaacaacaacgcaaaacg cgtcaaaagtgaagaagcaagaggaatttctaactgacatcagagcgaaaaacacaaat aaagactctcgtcatttcaaaaaacataaattactaagtaaatttacttcaaaaaagaa aaggtaaacatttcatcgttcaatagtaatgagaaggtaactcaaattaaacgcttagt ttagaagaaaaagagccataagacgttaaaagcaaaaagaaatccaataatacaattatc acactactcattcttattcattgttctcattttactctatattgtttacaccactaagtaaa atctcaaatgtaaatatttaaaggtaataacaacgtaagtacgagtaaaaaaaagaaagaa cttaacgcttacttcacgttcacgaatgtatacttttagtaaaaaaaagcgattaggaac ttaaacaacgatacttcaatcaaaagagttgatattcataaacaattaccaaacacgtta actgtttaacgtgactgagttaccaaattgttgggttagaagaaaaataaagataaatattgtg ccaattatagaagatggtaagaatttaacagaatacaagaatgaagttcacatgatggaa cctattcattgtgggttcaaaggagacaaaaaacacgaattataaaagctttatctgaa atgtcaccttaagtgagaaacttaatagcagaggtgagttacgcaccaactaaaaataaa caaagctgcataaagatttttaccaaagataatagcaagtcattggtagacattacaacg atgtcagacaaaatgcaattatttctcctaattgtcacaatcatttaagcagagatgattct ggcgaacttaagacaaaatgggtatattgatttatcggttggagcgtcatttattcttatt caaggttcatcaactgttcaatcgggtactgaacaaaaatgtaaccaagtcaacacaaagaa gaaaatgtagtcaaaagagaacttcaaatgtgtgataaaaatataaacaactctaaa gaaaaataat
530.	atgaagtggttgggttcaaatgctatcaatcataataaatggttaagtactttcacctta tccatcagtcgagtagacatagtcgaatgaagatgaaaattggactaaaaataaaaaatcga ggagaactaagagttggatttgcagctgattatgcacctttagaatttgaagagacgata catggttaaaactgaatagcgggtgtagatagaattagctaaaaagatttgcgaagat aatcatctaaagctaaaaatttgaacatgcaatttgtagcttatttaggtgcacttaag accggttaaaatcgatatttattatctcgggtatgacaacaactcccgaacgaaaaaaagaa gtggattttcaaaaaccttcatatgattacaataatgtgatgatgataaaaaagatgat gcaaaaacgttatcaaaacatcaaaagattttgaaggcaaaaaaattgctgcgcaaaaagg acagatcaagaaaaaattgcacaaactgagattgaagatagtaaaatttcttactcaat agattacctgaagctatattatctttaaagtggaagtagcaggtgtagttgttgaa aaaccagtaggtgaggcatattttaaacaataatcagaactaacattttcaaaagattaaa tttaattgaagaaaaagaaacaaacatgtatagctgttcttaagaactctcctgtacttta gataagctaaatcaaacgattgataatgtaaaagaaaaaaatttaattgatcaatcatatg acaaaagcagccgaagatagcaagatgtaggaattttatttctaaatattggcagtttt ttcattaaaggaaataaaaaatactattttgatttcttagtaggtgtggtattgggtct atttttaggtctttttagcttttataaaaaaagtaaaatttagaccattacaatggata gcaagtatatacatagaatttttaaggaggtactcctatgcttgtgcaagtggtttattgta ttttttgggactactgcagctttggggttagatatttcagctttaaatttgggtactatt gcgcttgggtataaatttctcagcctacattgcccagattatttagagctggtatttaagct tagataaaaggacaactgaagctgctagaagtttaggattgaattatagacagactatg caatcagtagttatgccacaggcaatttaagaaaaatttacctgcattaggttaattgaatt gtaaccttgattaaagaatcgctcatagtttcccaaatggagtgagtgaaatcatgttt aatgcacaagttgtacaaggatattctttgatcctttcacaccattgttagttgcagca ttactatattcttacttactatttgcacttacacgtgttatgaatttttgaaggagaa atgagtgccagtgat
531.	atgcaacaagaaacgacatcatggtacaacaagaatgggtttatagttttatcactttta ttcatttttccactagggtttatttctcatgtggaaatttagcaagtgccatctatttgca agaacaattacttctgtgcaatttcagttatcgtatttagcaagcattacctatttggt aatctacaaatgattgtaccagcaacatcaaatcaaaataacgaaactaaagaaactaca gagaataatgtaaatgataaagacgagcgaatcataaactgcagtagaagaacaaaa actaatttagactccaccaagaaaaataactaaagaacctggaaaaagaaatgaattcgca acacgattggagaactctgcgcttgaagaggcaagtcatttatgatgattttcacatg tctaaactaggaaatttatgatattttaacatctgaataggagaaaaatttgataaagaa gatgcacaattatgctatagatccttagaggtgattatgaaaagaatgcacgttagaaa gcaaaatcatatgccaaagatagcatatgtctaactactcaatttcagatcttttggtg tctaactcgggtgaaaaatttacagaatcagaagcaaaatagctatttagcatttggaat aat

532.	<p>atgagtcataagatatttagtatcagaccaatttctgaggatgggtttacaagtatttta aaacatccagaatttgcgtagatatacaaacagatttatctgaaatgatttagtaaat atgatttcaacttatgatgctcttatcgtacgaagtcacaaaccaagtaacagagcgaatt attaatgctgcaacaaatttgaaggtcattgcaagagctgggttaggtgtgggaataatt aalatagaagcagcgaactttaaaagggtatttttagtaattaatgctcctgagtaataca atcttctgctacagaacattcagtagctatgttgcttgcgaatggcagcgaatattcctcaa gcacaccaatctttagtaacaaagaatggaatcgtaaagcatttagaggggttgaactt tatggcaaaaaccttaggtgttatcgggtgctggttaggttgggttggcgctcgctaaacgt gcgcagagtttccggtatgaaaattttagcgttgcaccccttatttaacagaagataaagcg aagctattagatattcaaatgcaactgttgatgaaattgcccgaataatccgactttgtta acagtccacacaccatttaacacctaaaactcaggaattgttgggttcacctttcttttaac aaagctaaacaaaacttcaaatcataaatgttgcagaggggtatttagatgaaaact gcacttattgaagcatttagataataacttaatatagatcgtgcagctattgacgtattttaa catgaacctcctactgattccctctcattcaacatgataaaaattattgtcacaccacat cttggcgccctctactgtagaagcgcaagagaaggttgcagctctctgtatctgaagaata attgaaattcctaactaaaggaattgttgagcatgctgtgaatgctccaaaattggattta agcaaggttgataaaaacaaactcaagcttttaggttttaagtacaactattgggtgagttt gctattcagctctctcgtggtgctccgagtgaaattaaagttaaatatgctggtgactta ggcgaataatgacacatagtttaattacaagaacaattataacgaacatcttgaagaagat ttaggtaatgaagtcattatttattaatgcattagcaatacttaaccaacaagggtgcacg tataatatagaaaaacaaaagaacattctggctttagtagttacattgagctagaacta gttaaatgacaaagataaaaatcaaaattggcgcaacgggtattcgcaggttttggcccaaga atagtagctatttaattgattactcacttgattttaaaccttaaccaatatttagtaaca atgcataaagataaaacctgggtatagtaggacaacacaggaacctattgggaagtcacgga attaatattgctcaatgacttttaggacgtaacgatgctgggtgagatgctttaaattgatt ctttctattgatcaacaagcagtgaggaggtataaaaaattttaaatgaaacaagcgga ttcaacaaaattattagcactaaagttaacaatt</p>
533.	<p>ttgaagcgaattttatttaataatttaacatattatttaattgctatttattgtaagtcgt ttattcaaaaattgacatgtgattttgcccatttatgtttggaccaatattagcggcgta ttatgtgtaaaagtattaaaattaaaaatcacatggccattttgggtgagtcaaaattgggt ttaaactacttggagttcaaaattgggtctcacttccacacaacagtgattaaagacata agtaaaaatttggcctaactatcggttttggcactatcctactaatttattagctttgata attgcatcttttttaagaaaattgcacaagtaatttgaagaactgcaatttttaaggttt ataccaggttgcgctaagccaaattgttagtgatggcagaagaaaataagaagaacaaata ttagttgtgagtttaacacagacatcacgtgtaattttgtgttatttttagtaccactt atctcgtattttttcaggaataccatcatgaaatgaatcactacatggaagtaacc acactttctcagacttttaaatataatggcaataatcatcttttctcaatgggtgggaatc atctatataaggaatgtcaaaaattaaacttcccactaaacaattatttagcactataata gttttaattataatggaatatgacaacacatttaacattttcactagatcattgggtgtta gccacagcgcaacttatttatatacgtatttgattacagattgccaacttaattgagtt gatttaaaagggaagatttgcataagcaatagcctttcaaaaataaatgctcatagtcaca acgtttataatgataataggaatacatttgattactaatgaatccatcaatgaattgttt ttaggagcagcaccaggggttagtgatcaaatagtttttagtgggtatggctactggagct gatgtagcgtagatttcaagctatcacatttttagaattttttattatttttagtgcatt gcgcactaatgtggtattttatttaattgtaatttaataataataa</p>
534.	<p>gtgaagaaaacagtagaataattgcattcactcctcactagctcactattcacagga atgggtatgacgtatagaatgttagttaaaaattgtaatttttaggtctagatttgcgaaggt gggtttgaagtcctcttccaaagtagatccttttaataaaggagataaaaattgataaaaaa gcacttcaagctacatctcaaacattagaataatcgtgtaaatgttctaggtgtatcagaa ccgaaaatacaaatcgaagatccaaatcgaattcgtgtacaatttagcaggtatcaaggaat caagcacaagcgcgtaaaatttatcgacacaaagctaaatttaacaatttagagatgctgaa gatcatgttttaattgtctggttcagacattaaacaaaggctcgtctaaacaagaatttaaa caagaactaatcaaccaacagttacatttaagtaaaaagtaagataaaatttaagaaa gtaactgaaaagatttcaaaaaacgtgacaattgcatggttagtttgggttagatttcyaa aaagcgtagttacagaagaagaagctaaaaagcaacaagaaggttaaaaagcctaataatt atatctgcagcgaggttagaccaaccttatattctagtagtggttgaattttcaggtggc ttcaatgggaaaaaagggtgttgaagaagcgaacaaatagctgagttattaaatgcccggc tcattaccaggttgattttaaagaatttactcctaactctgttgggtgcacaaatttgggtcaa gatgctcttgataagaccatgtttgcatcaattgtaggtatagcatttaattttatttt atgcttgggtttctatcgtttgctgggttagttgcaatcattgccttaaccacttatatt tatttaacttttagtcgatttcaatttcatatcaggtgtattaaactcactcggattggcg gcattagtttttaggtgtaggtatggctgctcagatccaaatataatgtatgaacgtatt aaagatgaactaagaattggacgcacgcttaaacaaagcgtattcaaaaagcaataaaaagt tcattcttaactatatttgattccaacttaacaactgcatcgtcagctgtgcttttct ctctttggagaaggttcagtcaaaaggcttcgaaccatgttactcttaggtatttttaag atatttgaacgcaggtatttcttatcaagagggtgttatcattactggtatcttcaaac ttctttaaaaaacaactactggttatttgggtttaaagaagaaggtatagacatgataaatt gaaggtaaagatgtacatgatttaaaaacatcatatgaaggttaaaatttggtaaaatta gctaagccacttattcacttagtatttttaattgtaattatttgggttgatttatcatttca atattttaaattaaacttaggtattgtatttctcatccggaacaagagcagatattcaact aaaaatgctataacacaagcaggttgagaactgtaaaatcagttggattggaacca gatcaaatcacagatttaattgtagtggaaataaaaaatggcacagttcagtttaaaaagat ttatcacgtgaggaagacaataaaattaaagtgtcaaggtgaaatctgaatttggagataat ccacaaatttaataccgtttcacctctcattagggccaagagctagctaaaaatgctgtaact gcatttaacttgcctctataggtatttatctatgtttcactaagatttgaatggcgt atgggtctatctctgtacttgcatttatcatgacgtatttatcatcattgcaactctt agtttgggttagattagaagtagatttaacatttttagcagcagatttaactatcgttgggt tattcaatcaatgatacaatcgtaacttccgacgtgttcgagaaaatctgcataaagtt aaagtaattacgcatactgatacaattgatgatagtcacacgctctatttagacaaact atgacaggttcttatataacaggttgcagcttagttgtagttgttagttgcaattataata ttaggtgcaacaaacattttaaatttctctttagcattactaatggattattatctgggt gtattctcgtcaattttcattgctgtaccattatggggcagcttaagaacacagcagttt aaaaagacaaaaataataatttagtagtacacaagagaagaattcaccagtgaaaaa atcttagtt</p>

535.	<p>atgggggaaatacaaaacaagatttcaatcaaaaggacaaaattttaaatccacaaa aaacatagacgattatataatgggttcagtttttttaattgggtacatcagctatgggtcca gcatttctgactcaaacgcagtggtttactgcacaaattttatgctagttttgcatttgca atatataatttctattattatagatataggcgctcaaaataaattttggagaattattagtg gtaactgggattacgtggacaagaataatctaaataagttattacctggacttggtactatt atcccatataatggcatttgggtggtctcgcatttaacataggttaatttgcgtggtgca gggttaggtttaaatgcaatggttgggtcttgatgtaaaatggggtgctgcaataacagct atttttcgactacttatctttgttagtagaagtggtcagaaaaataatggatgttattagt atgatcttaggtatcgtaattgatttttagtagtgcgttatgtcatggttggtttcaaatccc ccttatggagatgcatttagtacatcacatttgcacctgaacatcctttcaaaccttatatta cctataattacattagttgggtggtacagtagggggttatattacttttgcaggtgcacat agaattctagattctggtataaaaggtaagtcacaccttcttctgtaaatcgatctgct gtagcagggtattttaacaactggtgctatgcgcaccttatgttttttagctgtactaggt gttgggttaactggcggttaacgcttagttcagaaaaatccaccagcatcagtttcccaacat gcatttgggtcttataggtaaaaaatattttggcgtagtaattttgcagcagcaatgtcc tcagtaatttgggttctgcataatacagcgcaacatttttaaaacactacacaaatcggtta ctcaataaaaaataatcttctggttattacatttattgtaatttcaacttttggtttctta tttattggtaaacgggtgagtttacttataatagctgggtgcgattaatgggtggatttcta ccaatcacattaggtgcaatttctcattgcaagtaggaaaaaatctatcggttggaattac caacaccaacatggatgcttggtttttgggtattatagccgtaattgtgcacaaatagact ggtatcttttctattacaagatttagcaagcttcttggaaagggt</p>
536.	<p>gtgtctaaataaattttaagatgatttcgaaaaaatcgtaattcttataatccagac gaacatcaaacagaattaaaagaagatgataaaacaaatgaaaaataaaaaagaagctgac tctcaaaacagtttatctaaactcaaatcaacaaatttctccgagaaatgcccaacga cgaaaaagcgcagagagacagcaactaatcaaaagcaaacacaaagcagacaaacatcaa aaaaatagtgacgctaaaaactacagaaggttcattagatgaccgttatgacgaagcagacag ttacagcaacaacatgataaactcgcaacaacaaataaaactgaaaaacaaatcacaaagat aatagaatgaaagatggaaagatgcagctattgtaaatggaaacatctgagtcaccagaa cataaatcaaaatcaacacaaaaatagaccggcgctaaagctcaacacaaagcgtaaa tcagaagtagcgaatcaaaacgctcaacaaacaaagataaaaaagcagctacaggtgct ggaaatagctgggtgcagctgggtgttgggtggtgcagcagaacatccaaacgctcatcataat aaaaaagataaaacagatttcaaaacactcaaacctagagaatgacgaaaaaatctgttaaa aatgatgacaaaaagcaatctaaaaaaggcaaaaaagcagcagctgggtgctggcgagct gcaggaggttgggtggcgctgggtgttgcgcacataataatcaaaataaacatcataatgag gaaaaaaattctaatcaaaacaaatcagtaaatgaccaatcagaaggttaagaaaaaagggt gggttctatgaaaaatcttgttaccacttatagcagccattcttattctaggtgcaatagca atattctgggtggttaggtctaaataatcaaacagatagtaaaagtgatgacaaaaaaata gcgaatcaaaagtaagaaagactcagataaaaaagatgggtgcgcaatccgaagataacaaa gacaaaaaatctgtagtagtaacaaagcaaaaaatctgattctgataaagacgcagatgat gactctgataatagttcttcaaatcttaacgctacttcaactaataaataacgataatgta gccaatataaactcaaatatacaaaacaaatcaacaagataatgcaaaccaaaatagc aataatcaacaggcaactcaaggtcaacaaatcacatagctatagcgttcaagaaaaactta tatcgttatcgccatataatattatggagaaggaactcaagctacagtagataaaatataa cgtgcgaatggatttaagcagtaataatattcatttaaggtcaaacattagttattctctcaa</p>
537.	<p>atggctaaaggggaccaatatcaagctcactgaaaaaatatcatgataaaaaagctctaaa aaaagttataaacctgtgtggattatcattagttttattattttaattacaatcttggtta ttaccacacagcaggattacctgtaattggctaaagcagcactagctattttagctttc gctgtagttatgtgggttacagaagcagttacttatccagtttctgcacatataatttta ggattaatgatacttttactaggtttaagtcagttcaagatttatccgaaaaaacttgga aaccttcaaaagtgccgacataataactaaaaaggttagcgatatttttaggaacgaataacgcg cttagtcagcgttttagtggtttttcaacctcagcgcgtagcacttgtagctgcagcatta tttttagcagtagctatgcaggaaaccaatttacataaacgacttgcattacttgtgcta tcaatttgttggaaataaaactagaaatatagtcatttgggtgctatttttagtattctattggt ctagcattcttttaccatcagctacagcagcgtgctgggtgcagttgttcccaatattactg ggaaatagctgcatttaattgtgagtaaggatagtagacttgcttcatatttaattatt actgctgtacagcagtttgcgatatggaatataggtattaaaaacggctgcagcacaacaaat attgtagccatcaattttataaccaaatttaggacatgatgtatcatggggagagtggt tttttatatgctgcgcgtggtcaatcattatgtctatagctctttattttataatgatt aagtttatgcccactgaacatgatgcaattgaaggtggaagaggttaattaaaaaggaa cttaataaatttaggaccagtcagtcataagaaatggcgactaatgtgatttcagtgctt ttattattcttctgggtgcagctgagaaggtattgcacccgattgattcagcttcgattaca ctagttgctctaggtattatactaatgccaagattgggtgttatttcttggaaaggtggt gaaaagaagattccttgggggacgattatagttttgggtgtaggaatctcacttggtaat gtattactttaaaccaggagccgctcaatgggttaagtgatcaaacatttgggttgatgggt cttaaacatttaccgatcatagcaactatttgcgttaattaccttatttaataatttaata catttaggttttgcaagtgcaacgagcttagcctctgcgttaattacctggtttatttct ttgacttcaacgctaaatttaggtgacatgctattgggttttggatataacacaaattt gtgattagtttttgggttcttactacctgtcagtcacacacaaatattgcttgcataatggt actgggacttttaccgtaaaaggattttttaaaagacaggtatacctttaaagtagtaggt tatatttttagttatcgtatttagtttgacgtattggaatggcttgggttagtg</p>
538.	<p>atggttagatttcaatcaacatttgccttagttatcaatttttaaatcggtgcatataatcaca tctatttttagttgggattgtatgtggaacgatgggtagcattattggtttacgtggtctt tcttttaattgggtgatgccatgagtcagctggttttaccaggtgttgcattatcttctta tttaatttccaatggtttatcggggcaacttgtaacgggaatgcttgcaggtttggttatt gggttttacttcaaacagtaaaacaaaaaccagatgctgcaataggaaataagtttccact gcatttctagcatctgggtcataattattagtttaatacaatagtaaacagatttataat cacattttatttggcaatttattagcaattacacatcaatcattttggacaacaattgtc attacttactgggttattttacttattattatcttttatagacctttaaatttcaaca tttgatgcaacttttagtcgtatgagcgggtgaacacacatttaattcactactttgtc atggttattactgcgacttgtaactgttgcgagcacaacacagttggaattatccttgta gttgccttactaatcactccagcttctacagcttttttaacagtaaacacatttatgccc atgagggtaattgcaagcacaatcagcgtgataagttcgattatcggtctatatttttagt tatataataatctccagtggaagcaactattgtaactgtaccttatgatttatatt gtaacgctatcaattactagaattaaaaataaaacaaaaaaggagcgtttaaagc</p>

539.	<p>ttggcaagctattatcaaaactaggaaaatttatagctagaacaaatggctaagtgtt ataggatggcttgggtatctactagggtgttattatcacgccattaatgataaaactcaccgaag tttgacagtgacatcactatgaacggccttaagtcatttagacacaaacgataaaatcagt aaagaatttcatcaggacagtgagaagcctcgatgaaaatagtcctccatttctaataag aattgatggactcaataataaagatacgaagaagatattgaagatgcttttagacaatatc agacaaaatgatgattatccaaaatctcttaataccatagcagtggaacaggttaaat gatgaaggcgatactgctatcgctaacgtaagttatgtagttccacaaactggattaaaa gatctcttcaaacatcatcgacaagaattaaaagatgtaactgacaaccaataatgtg caattgaaaaaactcaagggtggcgctatgaattccgaacctgggtggtacatcagaatt gtcggtatcatcgtagcattcgtaattcttacttattacctttgggtccacttatcgagct ggatggcaatttatttagtgaatcatcggtttagggttcaaggtgttggtatcatcgcat ttaacatatactcttgatattccaaacttcactcttacactagctgtaattgatagggtta gctggttgggtatgactactcactcttattctatttagatttaagaacttaagaaaaaa gggtcgatactgtagaagctattgcaacagcagtggttacagcaggcagtgctgtaata ttcgctgggtcttacagttatgatgtgctgttgggtttatcactgttaggaatcgacttc ttagcgggttatgggattcgcttcagcgatttagtggttatttgcagttattagcagcatta acactattcctggccttaacagtatcttccataaaagtattaaaattaaagataaacca actaaaagttaagaccctaaagatcattcttgggcaaaatttattgttggtaagccaggt atcgctgttatttgaagtttaattattttaaatttagctgctataccagtcagtggtgctg cggttaggtattccagatgatagttttaaaccacactgactcatcagaatacaaacgctat aaattaatctcagataattttggcgagggtataacggacaaattgtcatgttagtaaat acaaaagatgggtggaagttaaagcactatcgaaagtgatttaataaatatcgtagtgat ttagaagacattgataatgttgatacagtttcaaaagcacaactaacgacacaaacaaat tacgcatatttcaacatcattcttgaaaaaggaccgaactcacagtcacacagaaaaatcta gtatatgatttactgtgattatcatagccaagcgcaagaaaaatagactatggcactgaa atttcaggacaaaagtggttattaacatcgatattgcagaaaaactaaacacagctattcca gtatttgcaggcgcttattgtgtatttagcattctcttatttaattgatgtgttccggtcg atcttagttccattaaaagcagtagcaggttattcctttcatttaattggctacattaggt ttcacacacttagcattcaacatggcttattgggttagcttatttgggtattgaaaacaca ggacacatttacttgacttcttccagtaatacacaattggattgttattcggacttggccatc gactacagagctcttcttaatagacagtggtacatgaagaatacagtaagactggcgataat gatcatcactcctgttaggtatcaaaagaaagtggaactgttattcgtagctgctgcactt attatgttcagtgatttcatcgcatctgtcttccaagatgacagtgcaatttaagtcactg ggatcgcattaggtttcgggtgtgttattcgacgcattcgtcgtacgtatgacatttaatt ccagcattgacgaacactcttggtaagagcttcatggtaccttcttaattgggttaggtgca gtattgccaacagcttgacgttgaaggttaagctttagaagaagataatcaccagacaca cttcttgaaaaaggtcatgtgcaacgataaaaaatagtgaaactcttagacacagcaagat aactatgttttatcaaaatgacaaacgtaactacaatcgcaattataatgacgaagattat aaccgcttctgtgcatttaaaataatcatcatgaccagcatcatcgccaacatcaaatatgat aatcaacgtgatgatcatcgactatgaatcactttactcaagatggcgaccatactcat catgtagaacgttaattataatgatcgacactatcaagacaattacgatagaattatgat tatcgtcacacaatcatgatcatcaaaatgataacatgatattatcatgattcaaaattt gataaaacacaaacttatcaaaagaaattaaactgtagcaattatgataagattgattata ttcaaaagcatlaattgttatagctcgtgaaaacacaaagggtgtttacgatagataataac cgatcatctcaacatcgctcatgatgacgaacttagagac</p>
540.	<p>atgaataaaaaagtagaacatatacggtaaccaatatacgtcacagaaaaataagaaaaaa caacgcaaaaaatgaaaaatgcgtgtgtgtacgtagacgtattgctttattcggagggtatt cttttagcgattatcctcattctacttgtattgtcttgctattcaaaagacataataacgat caagatgcagttgaagggaaagagaaagaaactgagtttcaaaaacacaagatgaagaa attgctttaaagagaaacttaataatttaaatgataaagactatatcgagaaaaatagcg agagacgattattatttaagtaataaagggtgaagtcatttttagattacctgtagataaa aaatctctcagtcacaaagacttcaaacgaaaaaggcaat</p>
541.	<p>atgaagatacgttttaacatttattatcttagcaatactccaccatcggttagtactt gttttagcaaaaatatacaacaggccacacacaatacaactataacgaaccttatcacagta ctcatagccattacgacaatagttataatggctttaccagcactcatattaggtatattt aatcatcttgcatgtagaatcatatcggcgatattacaataaagtgcaactgatgatgtgg gggttttagttaatcattagcttaattatgggacaaattgtcattatgcttatggcttcc ttaacgatacttgcatcttggtagttctattgtcacactttcagtgcaacctcatctact tcagataaaaaataat</p>
542.	<p>atgaataaagaactattgtggagcatcattgggtattgttaattattgtcgtattaatcatt gctgcttttatattaaaacaagtttaattgggtcaggtagtaaaagatagtaattgcttacgat acatatacagtaagaaaagaacacctatttagtttagaaggcaagcgctccagaatct gtgaaaacttatacaataatcaatctgtgggtaacttcttaagttttcagtcacaagat ggtcaaacaggttaacaaagtgaaacgtatcatcaattatgatcaaaatgggaataaacgc caacaactatgaacaaagtgaatcaagcacaactcgaagttaattgatattatcaaaaa gtaaatcaaaagctcaacatcatcaattacaagttaaaattgactcaagatcaaaagtgtc ttaaatgaagctcagcagtcattgtcacaaatagcagacaaactcaatgacagcatgaat gcactatttgatgggtaaaattaaatataaaatgattcagatgtaggcgaagggaacact attttgcatttaatttcttcaaatcctcaaattaacgcaactattacagagtttgatatt aataaaattaaagaaggcgatgaagttaattgtcactgtaaatagcacaggttaaaaaagga aaaggaataatctttaaataagatgaacttctacaagctatgatcaagtgacgatagt acagcatcatcgccacaaagcaggggcacaaagtgatagtgagaaggaactgaatgacg acatctaactcacaatttaacagccaacaggtggtaaaagtggcgaaacatacaaaat aaagttatcattgggtgatttagataacccgtgagatcaggcttctctatggatgctaaa atcccccttaaaaactaaaaagctacaaaataacgtgttaacaaaagataataacgtattt gtcgttgataaaaaataaaagttcacaaacgtgaaattaaaattgaacgttaataatgggt gaattcattgtgaaaaaaggattgaattctggcgataaagtcctttaaagtcacaaagggt aatttaaatgatgggagaaaagtagagggtgcatca</p>

- 117 -

543.	<p>atggctgaaactactaaaaatatttgaatcacatttggtcaaacaggctctaaaagacagt gtattgaagctctatcctgtttatatgattaaaaatccgattatgtttgtgtagaagtg ggcatgcttgcttgcttaggatttaaccatttatccggatttatttcaccaagaaagtgt tcacggcttatatgtgttcagtatctttatcatatttactgacacttgtcttttgcgaac ttctctgaagcatttagctgaaggtcgcggtaaagcacaagccaacgctttacgccaaca caaactgaaatgaaggcacgtcgtattaaacaagacggcagttatgaaatgattgacgt agtacactgaaaaaaggacatatcgtacgtgctgcgcagcagggtgaacaaatcccaaatgac ggtaaggttattaagggcctcgcaacagtggaatgaatcgtgattacaggtgaatcgtgca cctgtaatacaagaagcgggtggagatttcgataatgtaattggaggaaactctgtagct tcagactgggttagaagttgagatttacttcagaaccagggtcattcatttttagataaaatg attggtttggttgaaggggctacaagaagaaaaacacctaataaattgctgtatttact ttattgatgacattaaagattatcttcttggtcgttattttaacgatgtatccattggcg aaattccctgaatttcaattttatccattgcatgctgattgtcttggctgtgtgtttaatt ccaacaacctatgggggatatttatcggtatagggattgcagggtggtatcgtgtgaca cagttttaatatcttggtctaaaagcggacgttctgtagagacttgtgtgtgtgaaatgtc tggatttttagataaaacagggtaccattaccctacggcaacggtatggcagatgctgttatt ccggtgaaatcatcaagctttgaacgttttagttaaaagcgccctatgaaagtcttatcgca gatgacacaccagaggacgttagtattgtgaaattagcttataaacaacatatcgactta ccgcaagaggtcggagaatatattccgtttactgctgaaacacgtatgagcgggtgtgaaa tttacgcacgtgaagtataataaaggtgcaccgaatagttggttaagcgtgtgaaagaa gcagggggacatatccagttgatttagacgctcttgcgcaaggggtgtctaaaaaagggt ggcacacgctggtttgtgcttgaagataatgagattttagggtgttatttttgaagat gtcattaaagatggactcgtagaacgtttccgtgaattacgtgagatggggattgaaacg gtgatgtgtacaggagataacgaattgacagctgacacaaatagcgaagaagcgggtgtg gatcgtctttgtgagaggtgttaaacctgaagataaaatcaattgtgattagagaagaacaa gcgaagggtcatatttltgcgatgacgggtgacgggtacgaatgacgcgccagcttttagca gaagctaatgtaggtttggcaatgaactcaggaacctgagtgccaaagaagcggcgaat ttaattgatttagatttcaatccaacaaactgatggaagtcgttctaattgggaacaa ttattaatgacacgtggctcactcactacatttagtattgcgaatgacattgcgaatac tttgcgattttaccagccatgtttatggcggtatgcctgcgatgaatcatttgaatatt atgcactcgtcattcaccgtgaatcagcagattattatcgtcgttaattctttagcgttgatt attgtattatgtattccgatttgcgatgaaagcgtgaaatttaaaggtgcctcaacgcaa accatattgatgaaaaatatgttagtttacggccttaggcggtatgatcgtgccatttatc ggcattaaagctcattgatctcatcatccaactctttgtc</p>
544.	<p>atgattgtgttacgtcgtctatttcaagatagagggtccatatttgcctatagctattatt acaatctacgtagtgcttggagtttttagctcctttaattacattctatgaaccgaatcac attgatcacagcaataaaatttgcgtggtataagttggtctcactgggtgggaacagaccat ctaggtcgagatgtattaaacacggataataacgccataagacctagtttgtttatgtatg ttgtgcgattgattatttccgttgtgtagaggagcgtacttgggtttatttcagggttat ttcccagggttatatcgatgcaataattatgcgtatatgcgatgtgatttagctttcca agctatgtgtgacattggcattgattacgtgtgttggcattgggtgtgaaaaatattatt attgcatttatatgtgactcgatgggctgtgttttgcgctgatttcgaaccagtgtaatg caatatattgaagctgatcatgtaaaaatttgccaaagtaattgggtatgaatgatttaaca atcattcgcaaacatatatttggcactaacctttactgacatagcagattattgcttagt tcgatgtgttcaatgatattacaaatgtcaggattctcattccttggattagggtgtaag gcacctacagccgaatgggggatgatgcttaatgaagcacgaaagtaattgttcacacat cctgggaatgatgatacaacagggtgtggctatcgtcataattgtgattggcgtttaacttt ttatcagatgctttacaaatggcgattgatcctcgtatgtccgctaaagaaaaacgactg gctctgaagaagggtgtgaaagcacgtgacactgct</p>
545.	<p>atgaaagggtgccatgtcttggccttttttaagattatattttaacattgatgtttttt agtcgaatgccatactcaatgttttcataccttaagaggacatgacttggggggcagc aatactgtaattggaattgtaatgggagcttatatgctaacggcaatgctatgtcgcccc tgggctgggtcaaatatttgcacgtattggtccgattaaagtattgcgtattatattattg attaatgctatggcactggtatttatatgggtttacaggacttgaaggttattttgattgca cgtatcatgcaaggtgtgtgacggcattcttctcaatgtctttacaattgggtattata gatgctttacctgagaaatatcgttcagaagggtgatctctctattcattattttcaacg attcccaatttattaggaccatttaattgcagttgggatttggcacgtggaaaaatagtcc atatttgctattgttatgatttttattgcagtaacaacaaccttatttgggttatagaact acttttgcaaatacacaaaaagagggtatcaccaaaagacgaagcttgccttttaattgca atgactgtatattgtccaaattttttaaataaagcactcttctgcagttggtatgattatg atcttgcacatctatcgtgtttgggtgcgatgagttactttataccattatatacggtagg gaaggtttcgcaatgcaggtattttcctcacaattcaagccattacagtagtgatagct agattttatttacgtaagtagtaccatctgattggtttatggcatcacggttttatgatg attgtcttaacgttactgattggttgcctcagtcattgtagcttttggaccacatatagtg agttattttgtatataaattgcaatctttatcggaataacacaagcgtcgtttatcct acattgacaacgtatttaagttttgtcttaccaaagataggacgtaaatgtttattagga ttgtttatagcatgtgcagatttagggatttactaggaggtgtgtaattggggccaata tcagatacggtaggatttaaatggatgtatattttatgcgctttattggttactattgca atgacactaagtaaaattagacaaagcaaaaggtgtttcaaaagcctca</p>

546.	gtgggaagtactgttaaatatcgtaagttattctacattgtcgttggtttaattatc tgggcatgtacgcctattaaccagatgccttaaatgatcaagcttggtttatgttgct atatttgtgtcaaccatcattgctgtattacccaacctatgactatagggtcagatca atcattgtgtttacaatcatgattttggttggattgttgatacaaaaactgcggttcaa ggcttcggttaatagtagtatttggcttattgcaatggcctttttcatttcaaggagatt gtaaaaacagggtcaggtcgacgtattgctctgcaattcggttaaatatttggaaagaaa acgcttgggttggcttattcacttgggttggatcttatcttagctcctgtcagcca agtaatacagcagcgtgctgggtgattatgtttccaatcattaagtccttggcagagtca tttggttcatcgccgagagatggttctgagagaaaaatgggtgctttttaactttact gagttccaaggtaatttaattactttagctatgttttaacagctatggccggttaacct atagcgcaaggtttagctgaaaaaacggcacacgttcaaatcacatggatgaattggttt gttgcgtctattatacccggttatttctctcctcgttgccttttcatattttataaa ttatacccaactgttaagaaacgcttaacgctaaaaatgggctactgaacaacta gaagaaatgggacatatgtctatagccgaaaaatgtatgggttggatctttatcatagca ttggcttgggttattaggaagcttcattatgttgatgccacgctcactgcatttatt gcttagcattgttactattaacaggtgtattagcgtgggtcagatattttaatgaaca ggcgcatggatcacactcgtttggttctcagttctgttataatggcagaacaattaaac aagttagctttatcccatgggttaagcaactcattgctcaaggtttaatggcttagt tggctatcgttttagtttactcatctgttttatttctactcactatttatttcgca agtgcaacagcacatgtcagcgccatgtacgcccgttactcgggttgcagtcgttgcg gggtcacccgcatatttactgtgcattaatgttagggttcttggtaacttactggcatca acaacacactatagtagtgaccagcgcccatattatagcagctgggtatgttacacaa aagcgctgtgggactatgaatatgtacttggtagtctattttatgtttgggttgg gtaggttccactatggatgaactcataggtatgatg
547.	atgaagataataaaatgttggctcattattttatgataggaaactttacagtaggaatg gctgaatatgtagtgacaggattacttacacaaatcgctgacgatatgaaggtttctatt tcgagtgaggttttataattagtggttattgctatttaggttgcatagggtcctttaa atgcgaatcataaacttgaaagttacagccacgctcgttaccgatttttagtagcgatt tttataaataagtaatttagtgggaatgttagcaccgaattttaagtattgttattatca agactcatgtctgcggcaatgcacgcccatttctcggtgtgtgtatgagtggttgcg acagtcgcacctcctcgtcaaaaaaacacagggccattgcacttggtcaggcaggtttaact attgctgttaatttaggtgtaccattcggatcatttttaggtggcttttgcacaaatggaga gttggttttggatttatgattgtgtggcaatcattactatgttaggaatgattaaattt gttccaaatgtttctttaaagtcagaaagcaaatattagcaagaatataacagtggttaa aatccacacatttttaattgtgattgcaattattgtgttgggttactcgtgtgttact acttatacatttatggagccaatgatagcagatttttctccatttaaaatgttaggttta actgtttgtttattatgttgggtcaggcgtgtgtatagggaatttaattactgttaatt gtaccggaagataaaataacaaaaaatttatacattacatttcttttactatttgaaca atcactactatttggtagtatttcaaaatccaattatagcattaatcatttgccttcta ttcggtttggtagatttggtagaaccggcttacttaatagcaaaatattcctaagtgga aaagaagcaccacttcttgaagtagcttagcagcttctattttcaatgttgctaatttt cttggtgcaataaattggatctatattattatcaatagggttaccttacctcaaatatt ttgatctcgttggaattatagtggttgggtatgcttcttaattctgttattcaactttat gaaagaacaatatcacatttaataatgaattatca
548.	qvlkmlqnilllmllllmllkikvliylimtlngfrdmvlklrfinnkslwaien
549.	krlvmqghlqfnlpkiillneltkrflslvtqlvmvfilvvsllkvpvqlq
550.	lrlrqfqlctvlmlvalflhaflylmtk
551.	rlrytsyiklaatdafklctcigtigili
552.	ssvfairltitfsrfsnvckkhikgaimkkeilewlvaiivaiivtvlvqkflfasyt vkgsnviyh
553.	rsvpshivltmrriiasvllvivgfslsvsca
554.	tannlisfiitlttniyktklmggyffnielrnkfirrcwailfiailhfisecflphipt ncyvsrfdfldsakmsyktlnticrnsfrivhkliv
555.	ffcriltqlnwlykylsvrmlmyfmi fsi mnhivstic
556.	ifistcgcssttsawkaevlplrvrfpspaf
557.	lkmllrvfiagltvffsgpgqtysnaafideyigtfgwsrtev
558.	rnsnqmygtftadi vli fmiivlglvvgvmpilaginmvvsetiyclhl
559.	nqrleetissphssal
560.	mkqflnitqrkfiewliilsifivsiipnkwltmisialslillkrgalgvqvliilymlr sqiytpydtqemahyivsmkyiliyvigvfflkyvkhwirnemlrifikstmlmlyi imsivnsndpiesilkllnffiplilivmyvslikkiknlinwingfitlviaftffiv iapksylideeslrsvfkdaahsfavilamglvlymvtlikqgdydvfnlllnigmliely lsnsrhifisvilclmlllplshikkrikhpiigamilmaiaingpyiyhlfiklilk knsqevfmpsdmnikaidyaltehpfllsgfipmikasseiqyfnvatsnii fgmliift giigtltctiymlhmvlvtfpmisitillflitifvnmndyilfdsvglgilcyifwgiy lkegmyqynngw
561.	mtngktvglvavpgvterlaenliqempkmlsthydhqgewifdlvtdpltgfaesvdei fgkvadyhdkrgwdyviaitdplmfadkqvmaldinmengaaifsyapfgwrpvkkrfk aiyniigqlneaeqesrnydrnkqiensvkkqfplskidketiymketdsyhlrylssr srgrfvlvegmtfannplnmnaslennivaiafttgagflvftcmwqmaynfsmwrlfgis iaaigmlwimmshdlwepvksnhkhitwlyntltmtlifaaiiyiilyllfliae ivllpsgflgqvgllkpgagidlylsipwfaasistvagaigagllndelikestygyrq rvryeeqrr
562.	mkfcphcgnpikkegsfcncgkghlktstqrksenqiehmreggsyisreerqhdstfy keqkhtgwlivliisifvlliaaallygayaynyhisdeqshqttesqqsnesqnrqgst gpsidvfdffdqgymksastsgyrgvngmtreevedkfgtsngsveslkwsyetygd avayddnevsvvgvapnhisedqflsmynepddrnssqliydsnkndndfsvlanvknqdv tvienvngi
563.	mllfiieiimilaillglrtagalgcgifaivaqlimifgqlppgsapvtavliilsi giaggtlqatggidylvyiasrvierfpksii fiapmivfvfvgigtaniaislepia ktagkarigpkraltasvltanallcspaaasatayisvlagyeismgkylsivptal ismlmstfctfvgrkehvrdeserlvqmpveikndfskvikgvisfllcvmgiltfg ifpnlmgpfnvngdvkvkventevqffmylsatlnlllikintsdlssnitsamgalf avlgpgwlgatinfaphnikilkndigsiisevpwlvilvsvvamisqtatasimvp ivmslgippiyfvamvgtlnvfvipagptllfaveldetgrtrptsfmipgffvitvsv itgfviktily

564.	mgsffnrmtrkenptiynqkdghlkrtrlvrdflalvgvgtivstsfiftlpgvvaaehagg avalsfllaaivaglvafyaemastmpfagsayswinvlfgelfgwvaggwallaeyfia vafvasgfsanrlglaipglislpkslnpfgsnngvidiaavviltalllrgmnea armenvlilvilkvliailfvigltainfsnyipfipehkvtegdggwgggiyagvsmif layigfdisiaansaainpqtktmprgilgslivailvfvavalvlgmfhyssyadnaep vgwalresghiaaivqaisvigmfataligmmllagsrllsfgdglipswlsqnlhkh lprnalviltiigvvgismfpfaflaqlisagtlvafmfvslamylrkrregkdlpkpef klplypilpaiftfilvllvfwglseaklytlwifvlgliiyligirhsKkndeeayqv pre
565.	mtkkrslspsewllkqskrhkrkntlytaivllvalvllifavksiqvepvksdtrdkds iritylgnvtlnkhirqtnlndvfkigiqdtldhsdstgslivndfsmgkdninknien imflrkhnvksvnlinesmdniqatamrkidsqagynfltgngsnpinsktvqqdikgk kianvsftdiesnytslnknttsisltpai fyplikkenndyvvvndwgpnernt trqkeyahalanagadviighntviqkvenykrtpifyslgnnttsdnflesknqgmivqg dwkgshngfhtipqskdgkiskdnrmkmdhirfknnikdksidlksgdnggytfev
566.	miehlgtintpyfgilvslipfviatyfykktngffllaplfvsmvagiakltgtisye ykgigdiinflepaticfaiplyrkrevlkywqlfggiavgtiialliylvaitfq fgnqiasmlpqaattaialpvsdggigvkeltslavilnavvisalgakivlkfksnp iarglialgtsghtlgvaaakelgeteesmgsiavivvgvavvpilapill
567.	mkrtkyrdsykyddqyqnhrkrseedmyrqhesqqransratqsendreyenhpery yngdryrreqqleeneeksskklwliailvillliivaitftraiinhndkvsndpnvs qnykvevngnddnrqvdsaksdikkkdtqsgidklngqidqkqneetnadskftkf yqngidklknannaglnnengskvnmmlidntkfkdsikaklenilngsngn
568.	mknkkglgiglitimiivcivlvimmvvggkkesyggimkdsttdimntknekieknv elpkdanvsvkkedfvmlfkdektgkitkvkknvhdvphgmskihdmgnmkkgm
569.	mamsllvslvvytmnttsdiledilsfklevimgfpyilssisliilfilfildmekiw ywlisvimiavismsghvwsqgvplwsiirihligltlwlglsvlylicyavkvingl tsvrmllkvniiaivmlvftgilmaidetntltlwnvnsawsiylvikiagiiaimllg fygtmrarqrqgvhrfalmtelligmililqvs
570.	mknsrfsfgfawmmvfvffvltmalsvilrdfqatigvkrfvfsikdlapfiaaivcilv fkhrkeqaglkfksislkvierllalilplliilmiglfssntyadsfillqtsdlsvsl ltlilighilmafvefgfrsylvlqnieltrmmtffasivvgliysvftanttygveyagyh fytfmfsmilgeliratngrtiyatafhasmtfalvlfseetgdflsmkvialstti vgvtfiisliiraivykttkgsiddevdpnylshiqdeepsqedasstsnhdvsskdet kqgdiddnkhgskkpnksddalttsnykedassvknkdetdthndnikdhstytedrshsv vndvkddeihevdkadtdksh
571.	mennelqrglnarqmniaalggtigvglmfgatstikwtgpsvilayliagifflimra ngemiyinpttgsfatfasdyihpaagymtawsnvfwwvvgmseviaaveymnywfp nwipgviavilflmaenlvsvkafgefefwafalikvvtivlmiaglgilfignggp igisnlwshggfmpngfigtffalsivigsyqgveligisagetknpqtnivkavngviw rilifigai fivisvypwnglgsigspfvatfakvgitfaaglinfvvltalsgcnsg ifsaarmlytlakkqgmppkvftkvmkngvpyfytvavsmgiligallnvilpliidgads ifvyvysasilpgmipwfmilfshlrfrlhpkehvhnpfkmpggaianyltimflilvl vgmlnketvsvvvgivfltavtlyylylryhkkerqi
572.	lqddfnlipgwfktfvqvgndliwsqyligilltagffftisskfiqlrmlpemfralte kpetlssgekigspfqafaisagsrvgtgniagvataivlgpggavfwmvliiafigaasa fmeatlagvykvhdkeggfrggpayyitkglnqkwlgivfavlitvtfafvntvqanti aesltqynispvitgvlavitgiiifggvrsiatlssliivpimaiviyigmvliilln idqivpmigtitiiksfvgvqvtggavgaailqgikrglfsneagmgsapnaaatsavph vkqgligslgvfddtmvctataimillysglqfgdsapqgvavtqsalnehlgsgagif ltvavtlfafssvvgnyyqgsnieflsnkmliffrcfvllvfvvgavaktetvsta dlfmgmlaivniisiiglsniafavmkdyqrqrkegrpvfkpenleinfgietygqha kmpkk
573.	lkkeilewivaiavaialiaitkfvgksysikgdsmdptlkdgervvvniigyklggve kgnvifvfhankkddykrvigtgpgdsveykndtlyvngkkqsepylnynekrkqteyitg sfktknlpnanqsnvipkgkylvlgdnevskdsrsfglidkdqivgkvslyrwpfsef ksnfnpnntkn
574.	mfnkwvrtgiffimlfiliklfmehvevfapiatiigsvflpflisgflfyiclpfqni lekwpfprwasittifigliaiaiaivvsfiapiiisninnlikqtpslqkeaeqlinfs rqmklpddvthrinkavksmgdatsilnsvsyitsfistvflimvpffliymldkh ekfipaigkffkgerkvfvvdllkdlnftlksyiqgqvtsiilgiilygytiiglypt pllvlfagvanlipflgpwlsfapaailgiidgpstfiwvcvvtliaqglegnvitpnvm gkslsihpltiivvilaagdlggftlilvavplyaviktlvsnifkyrqrivdkansnvkd
575.	mntivkhtvgfiasivltllavfvtlytnmtfhakvtiifgfafiqaalqlmfmhltg kdgrlqsfkvifaiiitltvtigtvymggghsshl
576.	nlgeqytqikrpanrlteklgwfsvflililtivsmfialvsfndtsianlentlnnn elvqgilannndlstqfviwlgngvwaivfivcllisflalismnirilsqllfliaa ivtipleliltvliipilffiiammfarrdrietvpsyyneydgpvydergyepesrn ehgynddvypmhtkdedrntrrqfmrnaqqdsyngitdnqpedtssdqlyseyvnd edkysqfpkraveseyasqgtedeptvmsrgakynkksntdfedagqehmegnqfddvg vvepqidpkelkaqrkrekaeirakkkkraynkrmkerrknqpsavngrrmnyeerrq minneqedtdnnlmggedskken
577.	meenknpgnnnmsnkddntihlndsqsnelelfrnknarqrrrrridngskekdats tsgletkpmkdfidnhkshnqdkesdllednvndeddnqkynrdklnrsvqqtset rqsneedeefltahqsektkdsrshskhllskfstskeketftsfnsekvtqikpls leekrairrkkgkriqytiitllililvllilymftplskisnvnikgnnnvstskikke lnvtsrsmytfsknkairnkqnplikevdihkqlpntltvntveyqivgleknkdkyv piiedgkelteykdeshdgpiddgfkdkktrikalsemispkvrnliaevsyaptknk qsrikiftkdmqvgidititadkmqyypqmsqslsrdsgelktngyidlsvgasfipy qgsstvsqgteqnvtkstgeendakeelqnvlnkinkqskenn

578.	mkclfkmlsiiiimlstftflfispstyanedenwtklmrgelrvgladyaplefeakti hgktheyagvdielakkiakdnhlklkivnmqfslgalktgkidiisgmttperkke vdfthkpyminnnvmmikddakrygnikdfegkkaagkgtdqekiaqteiedskissln rlpeailskskgkvagvrvvekpvgaylkqnseltfksikfneekktciavpknspvll dkingtidnvekenlidqymtkaaedmqddgnfiskygsffikgikntiislvvgvllgs ilgsfiallkiskirplqwiiasiyieflrgtgmvlvqvffvfgttaaalgdisaligcti alvinssayiaeiiraginavdkgqteaarslglnyrtmqsvmpgaikkilpalgnef vtlikessivstigvseimfnaqvvggisfdpftpllvaaallyflitfaltrvmnfiegr msasd
579.	mshkilvsdpisedglqsilkhpefdvdiqtdlsendlvnmistydalivrsqtqvtteri inaatnlkviaragvgvndninieaatlkgilvinapdgntisatehsvamllamarnipq ahqslrnkewnrkafrgvlygkltlvgigagriglgvakraqsfgmkilafdpyltgedka ksldiqiatvdeiaeksdftvtvhtpltpktrgvgssffnkakqnlqinvarggiidet aliealdnnlidraaidvfehepptsdpliqhdkilvtpghlgastrvaekavavsvseei ieiltknvvehavnnapkmdlskvdkttgfsfiglittigefaiqlldgapseikvyagdl aqndtsliitrtiitnilkedlgnvniinalalinqggvtyniekqkksghsfssyieel vndqdkikigatvfagfpprivrindysldfknqyqlvtchdkdkpgivvggtgnllgshg iniasmtlgrndaggdalmilslidqqaseevikilnetsgfnkiistklti
580.	lkrnfinnliilliaimslsllkmlhvilpfmfgpilaallcvkvllklkirwfwlsqig lilllgvqgstftqgvikdisknwtivfvtilillilialiaffkkaiaqvnletailsv ipgalqsmvlmaeenkkanilvvsittqtsrvifvvlvplisvffqdnhhemhmttmevp tislqtniwiqiiilfsmvgiiygmskinfptkqlapiilvliiwmntthltfslldhwl ataqliyimrigliqianlmsdlkgriaiaiafqnimlittfmiigihltnesinel lgaapggmsqivlvamatgadvamissyhi friffilfviaplignyfinvklennk
581.	vkkttsriiafilliallftgmmtkyknvknvnlglldggfevlfgvdpnlngdkidkk alqatsqtlennrvnlvgvsepkiqiedpnirrvqlagikdaqarkllstqanlirtdae dhvmsgskdikqgsakgefkgqetnqptvtfkvkskdkfkktvtekiskkrdnvmvwlde kgdsykeakkgqegkpkpfisaasvdqpinsssvseisggfngkkgveeakqiaellnag slpvdikeysnsvgaqfggdaloktmfasivgialiyifmglgyrlpglvaiialtyi yiltvafnifsgvltlpglaalvlvgvmavdaniimyerikdelrigrtlkqayskanks sfltiidsnlttviaaavffffgessvkgfatmllgilmi fvtavflsrgllsllvssn ffkkygvlfgvkkdrhdinegkdvdhldktsyerlnfvklakplisiliviigliis ifknlngidfsqstradiqsknaitqagvtektvksvglepddiqingsgnknatvqfkdd lsreednklsakvksefgdnpgintvslpiggelaknavtalilasigiiyyvsrlfewr mgissvalldhvfiiiaifslfrlevdltfiaavlitvgysindtvtfdrvrenlhkv kvi thtdqiddivnrsirqtmtrsrntvltvvvvvavililgaptifnfnslalligllsg vfssifiavplwgmklkrqfkktknklvvhkekksndekilv
582.	mgentkqdfnqgqnkfktkhrlllygsvflmatsaigpaflltqtavftagfyasfafa ilisiiidigaqiniwrlvvtglrggeisnkvlpplgtiisiliafgglafnigniaa glglnamfkdvkwgaaitaifailifvsrsgqkimdvismilgimilvvayvmvsnp pygdalvhtfapehpfkllipitlvvggtvggyitfagahrildsgikgksylpfnrsa vagilttvmrtilflavlgvvvtgvtlssenppasvfgahlgpigknifgvvifaams svigsaytsatflktlhksllnknllivittfivistfvflfigkpvslliaagaingwil pitlgaailiasrksivgnyqhptwmlvfgiiaivtmtgifsldlaslwk
583.	vsnnnfkddfexnrqsinpdehqtelkddktnenkeadsqnslnsnsgqgfprrnaqr rkrrretatngskqgddkhqknsdakttegslddrydeaqllqgghksqgqmkteqsgd nrnkdgkdaiivngtsespehkskstqnrpgpkagqqrkksstqskpstnkdkkaatga giagaagvagaetskrhnnkdkqskshshendeksvknddqgskgkkaavagaga agvgaagvahnnqnkhneeknsngnnyndqsegkkggfmkillpliaaililgaia ifggmlnnhndsksdqkianqskkdsdkkdgaqsednkdkksdnkdkksdsdnadd dsdssnspnatstnnndvannnsnytnqngqddnangnsnnqatqggqshvvygqenl yriaiqvygqetqanvdiklkranglssnnihngqtlvipq
584.	makgdqyqahtekyhdkkskksykpvwiiisfiilitilillptpaglpvmakaaalaf avvmwvteavtpvsatliilgimilillglspvqdlseklgnpksgdiilkgdsilgttna lshafsgfstasavalvaalflavamqetnlhkrallvlsivgnktrnivigailvsi laffvpsataragavpillgmiaafnvskdsrlasliitavgavsiwnigiktaaaqn ivainfinqnlghdsvsgewflyaapwsiimsialyfinikfmppehdaieggkelikke lnklppvshrewrlivisvlllffwstevklhpidasitlvalgiilmpkigvittwkv ekkipwgtliivfgvgislgvllktgaagwlsdqtfglmgklhpliatialitlfnili hlghfasatslasalipvfisltstlnlgdhaigfvlilqgfvisfgfllpvsapqmmayg tgtftvkdflktgipitvgyilvifstlywkwglv
585.	mlldfinhilsyqflnralitsilvgivcgtmgsiivlrgslmgsdamshavlpqvalsfl fnipmfigalvtgmilasifigfitsnktkpdaaigisftaflagviiislinsttdly hilfgnllaitqgsfwttitvltvilliiifyrplmistfdatfsermsglnttlihyfv mlllalvtvasiqvtvgiilvvalitpastafliksqlyamvviassivissilglyfs yiynipsgativictfmiyivtltisitrikknkqkrsalt
586.	lakllyklgkfiaknkwlsvigwlvilgviitplminspkfsdsditmnglksldtndkis kefhqdekasnkivfhsnkndglnnkdktkkdielaldnirgnddyiqnlsnpydsgqvn degdtaiansvsvvpgtgldksskhiidkelkdvtndhnnvlektqggamnspegggtsei vgiilvfvillitfgsliagmpilisailglssvgiialltyifdipnftltlavmigl avgidysfilfrfelkklkgvdtveaiaatavgtagsavi fagltvmiavcglslvgidf lavmgfasaisvl favlaaltllpalisifhksikikdkptksdkpdkhswakfivgkp iavivslilililaipvgmrlgipddslkptdsseykayklisdnfgegyngqivmvlv tkdggskstierdlmnrdsledidndvtvskagltldnnnyalftipekgpnsqstenl vydlrdyhsqakekydygteisgqsvinidmskelnnaipvfagvivvllaafflmivfrs ilvplkavlgfilsimatlgfttlviqhgfmglfientgpllaflpviitigllfglai dyelflmtrvheesktgndhsirvgikesgppvivaalimfsvfiavfvgddsaiksm gialgfgvlfdafvvzmtlipaltklfgkaswylpklvgavlpnvvdvegkaleednhhd ssekghvndknsesyrqdkdnyvyqndkrnyrnnyndedynrsvlnnnhhdqhrqhdyd nqrddidyestlytqgdghthhdernydrnyqndyrnddyrhnnhhdhndhdyhdsnf dkttlnlykeltidsnidqdvlfkalmlyarennkgyvdyrnrssqhrhddelrd
587.	mnkkehingnytsqenkkqrgkkmrvvrrialfggillaililillvllvigrhnd qdaverkeketefqkqgdeedialkeklnnldkdyekiarddylysnkgevirfrpddk kssqsktsnekgn
588.	mkirltffilailstiglvlvakyptgphntinynepytvliaittivimalpalilgif nhlacriisailqisalmwgfliislimggivimlmasltiallsvssivtlsvhpst sdkin

589.	mnkklwsiigiviivvliiaafilkqvngsgskdsnaydytvrketpislegkaspes vktymnngsvgnflsvsvqdggtvkqgeriinydtnknkrqqllnkvngagsqvnddyqk vngspnnhqqlkvltqdgsealneaqgsisqydrqlndsmasfdgkinikndsdivgegq ilqlissnpginatitefdinkikegdevnvtnstgkkgkqkilkidelptsydtssdds tassagagagdseegtemtsnptinqptggksgetskykviigddldipvrsggsmdak iplkttklpnvltkdnvfvvdknkvkhkreikiernngeiivkkgksgdkvlkspkg nlndgekvevss
590.	maettkifeshlvkqalkdsvlklypvymiknpimfvvevgmlalgltiypdlfhgesv sriyvffsifiillltlvfanfsealaegrgkaqanalrqtqtemkarrikqdgsgyemida sdlkkgghivrvatgeqipndgkvikglatvdesaitgesapvikesggdfdnvigtsva sdwleveiltepghsfldkmiglvagatrkktpneialftllmtltiiflviltmypla kfinfnlsiamliavoliptttigllsaigiamdrvtqfnilaksgsrsvetcgdvnv liidktgtitygnrmadafipvkssseferlvkaayessiaddtpegrsivklaykghidl pgvegyepftaetrmsgvkfttrevykgapnsmvkrvkeagghipvldalvkgvskkg gtplvledneilgvilylkdvikdglverfrelremgieltvmtgdndeltaatiakeagv drfvaeckpedkinvireegakghivamtgdgndapalaeanglamnsgtmsakeaan liidlsnptklmevvlvgkqlmtrgrslttfsiandiakyfailpamfnaampamnhlni mhlhspesavlsalifnaliiivllipiamkvkfgastqtilmknmlvyvggmivpfi giklidiilqlfv
591.	miylrllfqdrgai faiaitiyvvlglaplittfyepnhidtankfagiswshwlgtdh lgrdvltirliayirpsllyvvaliisvvgailgfiisgyfpgyidaaimricdvmlafp syvvtlailtlfmgvneniiafilitrwwfcrvirtsvmgyieadhvkfakvigmdnlt iirkhiltfttdiaiaissmcsmlqmsgfsflglgvkaptawgmmlnearkvmtfh pgymmttgvaivivmafnnflsdalqmaidprmsakekrlalkkgvkardta
592.	mkgamswpflrlyiltlmtffsanailnvfiplrghdlatntvigivmgaymltamlcpr wagqiliarigpikvlrliillinamalvlygfttlegylarimggvctaffsmlqlgll dalpekyrsegvslslystipnllgpliaavgihwenmsifaimvfiavtttlfgyrt tfantqkevspkdevlpfnamtvyvgffknkalfcsgmimilssivfgamstfipltytr egfanagifltigaitvviarfyrlkyvpsdglwhhrfmmivltllmvasvivaqgphiv sifvyisafigitqalvyptlttlylsfvlpkigrmnlglfiacadlgislggvlmgpi sdtvgfkwmlylcallvtiamtkskirgrqsvskas
593.	vgstvkryrkfilpivvgliiwaltpikpdaalndqawfmfaifvstiiacitqpmtigavs iigftimilvgivdtktavvgfgnssiwliamaaffisrgfvktglrrialqfvklfgkk tclayslvvgvdlilapatpsntaraggimfpiksisesfgssprdgserkmgaflift efqgnltisamfltamagnpiagslaektahvgitwmnwfvaaipglisliivvpfiik lypvtketpnakkwateqleemghmsiaeklmvgifiialalwvlgfsfinvdatltafi alaillltgvlawdsilinetgawntlvwfsvvlmaeqnklglfipwlskiaaglingfs wpivivlilifysihylfasatahvsamyaaallgvavasgapplfsalmglffgnllas tthysggpapiyaagyvtqkrwvtnnivlgivvyfiivigvgsllwmklignum
594.	mkdknmlfiifmigtftvgmaeyvvtglltqiaddmkvssissagllisvyaisvaligpl mrliitlkvhahrllpilvafiisnlvgmlapnfnvlllrlmsaamhapffgvcmsvaa tvappakktaqialvqagltiavmvgvpfgsfllggfanrvvfvfmiivlaiitmlgmikf vpnvslsaeaniskeltvfknpilivaiiivfgysqvfttytfmepmirdfspfkivgl tvclfmfglvgvignltignvpedkltknlyltflllftvltlftvqmsilaliicfl fgfgtftgtpllnskilsgkeapllastlaasifnvanflgaiigsillsiglpvqit lisggliivglmlnlvnglyekkhithfneys
595.	MAVKVAINGFGRIGRLAFRRIQEVEGLEVVAVNDLTDDDLALHLLKYDTMQGRFTGEVEV VDGGFRVNGKEVKSFSSEPDASKLPWKDLNIDVLECTGFYTDKDKAQAHIEAGAKKVLIS APATGDLKTIIVFNTNHQELDGSETVVGASCTTNSLAPVAKVLNDDFGLVEGLMTTIHAY TGDQNTQDAPHRKCDKRRARAAENIIPNSTGAAKAIGKVIPEIDGKLDGGAQRVPVATG SLTBLTVVLEKQDVTVEQVNEAMKNASNESFGYTEDEIVSSDVVGMTYGSFLDATQTRVM SVGDRQLVKVAAWYDNEMSYTAQLVRTLAYLAELSK
596.	vkrlknfilgllivaivgfllfmyiddsriqsyqdyflqfnwfpplliglaglliligli lvlsifkpthrkpgglyknfddghiyvsrkavektiydtiakdyqvrqpnrvsklynknkn sfidikaadfvpnhvqkksltesiradiksnvehfteilprklevnvrdqktsgrvrl
597.	msflrkhteifisyiigivslftgliifinlplikqfgdkkvdthvhnvwefflnaffae iikvmskfiggfpitsaivivfgilvmlghtlfrtikydydisifflvigimyiitl llmtqvygffaivfiipftvhigiyvykdelnqdnrknhywmliivtygmsylitqislyg ridaneiesidilsvntffiiimwllgqmaiwnflflrrslptkeelgeeeepelsrtng nvsngtkvhlkqlnktteyarktrrsvdldkirakrdkfkqknsivdiqeddipnwmk kpkwvkmymvqlfcgvillffaflefnrnalfltgewelsqtgyvvevwtlilllfi iyiatlttylrdkyylqlfmgslffkfltefinimvhglllsifitpilllmlami vayslqlrek
598.	mqqettswykqewfivlslfifplglflmwkfskwpsiaartiitvaisvivlasityyg nlqmvipatsnsnnetkettennvndkdernhktaveetktnydstkentkepgkenesa trlensalekaksyyddfhmskigiyltseyggekfkdadaqyaidhleadyeknalek aksyakdmhmsndsiydlivsnygekteseakyaiehlnd

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

☐ BLACK BORDERS

☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES

☒ FADED TEXT OR DRAWING

☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING

☐ SKEWED/SLANTED IMAGES

☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS

☐ GRAY SCALE DOCUMENTS

☒ LINES OR MARKS ON ORIGINAL DOCUMENT

☒ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY

☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.